College and University Business

GUEST EDITORIAL

WHY NOT MAKE *Free* EDUCATION FREE?

ROBERT M. HUTCHINS
Chancellor, University of Chicago

AMERICAN EDUCATION IS FOUNDED ON THE notion that democracy is achieved if low fees, or none, are charged and there is no discrimination among students in the terms of their intellectual ability. We assume that we have democratic education if we do not charge for it and if we make clear that every citizen is entitled, as a matter of right, to as much free education as every other citizen.

This assumption is false in all its parts. Actually, the important cost of education to parents is not fees but the student's subsistence, if he lives away from home, and the loss of his earning power. In this country, however, the scholarships given by private foundations rarely cover more than fees; and the institutions managed by local and state governments feel that they have performed their whole duty when they charge no fees or very low ones.

Since it would be undemocratic to discriminate among students on the basis of intellectual ability, democratic education in America has meant that all those who could afford to continue in education have been able to and those who have not the money have not. Hence, the paradox that in that country which provides "free" education for all, the length of a young person's education varies directly with his capacity to pay.

Here I think it safe to say that we fall behind every country in the western world. Until the National Youth Administration and the G.I. Bill of Rights—may the precedent live forever—nothing was ever done by anyone to recognize the cost of living as an element of the cost of education.

What we need is a national system of competitive scholarships providing awards large enough to enable the qualified student to study as well as to live. We need also a system by which those students who are not qualified may be excluded from the university. The basic task of education for citizenship should be performed outside the university. The university should be devoted to advanced study, professional training, research and the education of leaders. Therefore, it must be limited, if it proposes to succeed in any of these tasks, to those who have demonstrated their capacity for advanced study, professional training, research or leadership. The notion that any American, merely because he is one, has the privilege of proceeding to the highest university degrees at the expense of the taxpayers must be abandoned.

A six year elementary school, a three or four year high school and three or four year college, all locally organized, would give us a group of institutions that could take care of the fundamentals of education and relieve the universities of the necessity of doing so. The 650 or more junior colleges in the country could be transformed into the colleges which would stand at the apex of this system of popular education. Students graduating from these colleges would do so at the age of 18 or 20. Only those who had shown their ability to go on should be admitted to the university, at least at public expense.

We might then have a system of education democratic in the purest Jeffersonian sense, for Jefferson's proposals for the University of Virginia contemplated a rigorous selection of students after three years in the grades, the like of which has never been seen in this hemisphere. There is nothing undemocratic about saying that those who are to receive education at public expense beyond whatever minimum is necessary for the sake of society must demonstrate their capacity to profit by it.

The creation of local colleges as the culmination of a 6-4-4 or a 6-3-3 system of education would give us a chance to develop institutions devoted to liberal education free from the domination of universities and universities free from the domination of collegiate interests. We should have an intelligently organized educational system, democratically operated and equipped to play its part in the new world struggling to be born.

College and University Business

FOR BUSINESS OFFICIALS OF COLLEGES, UNIVERSITIES & RESIDENT ACADEMIES

RAYMOND P. SLOAN . . *Executive Editor*
HAROLD W. HERMAN . . *Managing Editor*
MILDRED WHITCOMB . . *Assistant Editor*
MARIAN DRISCOLL . . *Editorial Assistant*

J. W. CANNON JR. . *Publishing Director*

In this issue:

Why Not Make Free Education Free? ..... op. 1
ROBERT M. HUTCHINS

Looking Forward 3
J. W. CANNON Jr.

Administrators Can Solve Higher Education's Problems 4
JOHN DALE RUSSELL

Better Supervision Through Management Training 7
ROBERT F. MOORE

How to Run a Model Store 9
JOHN RICHTER

Small College Need Not "Think Small" 11
FLORENCE HOTCHKIN

Time Saver for Veterans' Billing 12
C. H. PRATT

Where Will the Money Come From? 14
FRANCIS J. BROWN

How's Your Telephone Etiquette? 15

Let's Face the Problem of Wages 16
MERRILL M. BARLOW

Five Criteria for Union Furnishings 18
MICHAEL M. HARE

Nebraska's New Buildings Completely Air Conditioned 19
LAURENCE F. SEATON

Know What's in the Paint You Buy 22
FREDERICK L. BROWNE

Idaho Plans for Comfortable Living 24
THURLOW BRYANT

Stanford Looks Where It's Growing 26
FREDERIC O. GLOVER

Sensible Approach to the Veteran's Future 27
HOWARD R. NORRIS

Trustees' Authority to Invest Trust Funds 29
M. M. CHAMBERS

The Eyes Have It in Food 31
ELEANOR M. SNEDEKER

Questions and Answers 33

News of the Month 34

Directory of Associations 40

Product Information and Advertising 41

What's New 58

Want Advertisements 63

Published monthly by The Nation's Schools Publishing Co., Inc., 919 North Michigan, Chicago 11, Ill., U.S.A. Otho F. Ball, president; Raymond P. Sloan, vice president; Stanley R. Clague, secretary; J. G. Jarrett, treasurer.

Copyright 1947 by The Nation's Schools Publishing Co., Inc.

Acceptance under act of June 5, 1934, at Chicago, Ill., authorized March 4, 1947. Published on the tenth of the month of the date of issue. Change of address should be sent thirty days in advance of publication date.

EDITORIAL BOARD

GENERAL ADMINISTRATION

HARRY L. WELLS.....*Northwestern University*
GERALD D. HENDERSON..*Vanderbilt University*
A. W. PETERSON.....*University of Wisconsin*

FINANCE AND ACCOUNTING

J. HARVEY CAIN.....*Forest Hills, N. Y.*
C. D. SIMMONS.....*University of Texas*
F. L. JACKSON.....*Davidson College*

PERSONNEL AND OFFICE MANAGEMENT

H. A. BORK.....*Higher Education, Oregon*
CHARLES W. HOFF.....*University of Omaha*
DONALD E. DICKASON....*University of Illinois*

PURCHASING AND STORES

GEORGE S. FRANK.....*Cornell University*
HENRY B. ABBETT.....*Purdue University*
H. W. LOMAN..... *Pennsylvania State College*

DESIGN AND CONSTRUCTION

HENRY KAMPHOEFNER.....*Univ. of Oklahoma*
ERNEST PICKERING.....*University of Cincinnati*
ERNEST L. STOUFFER.....*University of Illinois*

PLANT OPERATION AND MAINTENANCE

FRED G. ROUNDS..*State College of Washington*
A. F. GALLISTEL.....*University of Wisconsin*
CARL M. F. PETERSON.....*M.I.T.*

FEEDING AND HOUSING

MARY DEGARMO BRYAN..*Columbia University*
DAVID FORD.....*University of Notre Dame*
ROSALIE S. GODFREY.....*University of Texas*

AUXILIARY ENTERPRISES AND RELATED ACTIVITIES

W. E. GENTZLER.....*Columbia University*
W. T. MIDDLEBROOK..*University of Minnesota*
R. B. STEWART.....*Purdue University*

STUDENT ENTERPRISES AND SERVICES

W. A. BODDEN.....*Smith College*
PORTER BUTTS.....*University of Wisconsin*
KARL KLOOZ.....*University of Kansas*

EDITORIAL CONSULTANTS

T. E. BLACKWELL.....*Washington University*
BOARDMAN BUMP.....*Mount Holyoke College*
ANNA M. TRACY.....*Florida State University*
COL. ALLEN R. ELLIOTT.....*Culver Academy*
LESLIE F. ROBBINS.....*University of Colorado*
STANLEY PATTERSON.....*S.M.U.*
LESTER RIES.....*Oberlin College*
RALPH WATTS.....*Lawrence College*
IRVINE WILSON.....*University of Denver*

Among the Authors

M. M. BARLOW

MERRILL M. BARLOW, business manager of Drake University, has been active in college administrative circles ever since he was graduated from Illinois College. First serving as alumni secretary and assistant to the president of his alma mater, he later became business manager. He left to assume the business managership of William Woods College and in 1942 accepted his present position. He is both golfer and fisherman. . . . MICHAEL M. HARE, New York architect, has for seven years served as architectural consultant to the Association of College Unions. Educated in private schools and colleges in the United States and in Europe, he has received wide recognition in design, has written extensively for architectural magazines, is an officer or trustee of several agencies and societies and has a distinguished war record.

R. F. MOORE

ROBERT F. MOORE, director of personnel at Columbia University, had been in personnel work for ten years when the war came. Then he put on an army uniform and did personnel work three years longer, including service with the atomic bomb laboratories. He has been officer of several personnel management bodies. Through either collecting antique furniture and miniature lions or rose gardening, he knows how to offset the pressure that accompanies his important job. HOWARD R. NORRIS, director of information at the New York University Testing and Advisement Center, was a newspaper reporter and feature writer for more than ten years; during the war, he served three years in the military intelligence division of the army. Graduate of Amherst, he has done advanced study at the University of California and at Columbia University.

L. F. SEATON

LAURENCE F. SEATON, operating superintendent of the University of Nebraska, has held the position for twenty-seven years. Formerly he was professor of agricultural engineering and of mechanical engineering at the university. He likes to travel and has visited nearly all the large universities in the U. S. His particular interest is beautification of grounds. His main hobby now is training his three year old grandson to be a mechanic. . . . JOHN RICHTER, manager of bookstores at Tulane University, has made the efficient management of bookstores his vocation and hobby ever since he was graduated from Baylor University. He is active in the National Association of College Stores. His two little girls are his real hobby but he also collects books about books.

E. M. SNEDEKER

ELEANOR M. SNEDEKER, director of foods and housing at Hobart and William Smith Colleges, is a graduate in home economics from the University of Kentucky with five years' experience in business and commercial food service and management in addition to that of her present post. Musically inclined, she collects records of musical plays and operas and is interested in sports and photography.

Looking Forward

C.U.B. Lights a Candle

COLLEGE AND UNIVERSITY BUSINESS made its first appearance in July 1946, just a year ago. Our investigations during the several years preceding had convinced us that there was a need for such a magazine. They also clearly indicated that unless we had cooperation from the men and women actively engaged in the many phases of college business administration there was little chance of success. We were going to have to depend upon our readers to be our authors. The needed cooperation has been forthcoming, and it has been given willingly and generously. We appreciate it.

Many have asked us why they are receiving the magazine without charge and when we are going to put it on a paid subscription basis. To them our answer is that at present we intend to continue on the current basis. The magazine is to be financed entirely from advertising revenue. Some have inferred that it is not possible to do this without tainting the editorial text with commercialism. As publishers of *The Modern Hospital* since 1913 and of *The Nation's Schools* since 1928, both of them the leading magazines in their respective professional fields, we have demonstrated it can be done. During the last year, with only one exception, the 203 articles in COLLEGE AND UNIVERSITY BUSINESS were written by authors having no commercial connection. Advertising can be effective only when the readers' interests come first.

In trying to build a magazine for maximum reader usefulness, we made a radical departure from current publishing practice by completely segregating editorial text from advertising content. No other publication we know of has done this to the same extent. Readers have been quick to tell us that this segregation results in better readership of each section. Both administrative technics and up-to-date product information are essential parts of the job of every business officer, purchasing agent, buildings and grounds superintendent, director of housing and feeding, director of college unions and similar personnel constituting the 5200 persons to whom the magazine is mailed each month.

The publishers of COLLEGE AND UNIVERSITY BUSINESS do not claim to be experts in the field of college business administration. We consider that the function of the magazine is to record significant developments in the field and to present practical ideas that are being used effectively in other institutions. In an effort to keep the magazine tuned to the readers' interests, members of the editorial staff have attended 20 conventions in the field of higher education during the last year and have traveled 12,000 miles to interview more than 200 college administrators on campuses all over the country. They have received much expert counsel on the selection and evaluation of editorial material from a loyal group of editorial advisers and consultants drawn from the outstanding men and women in the field. We are particularly indebted to this group.

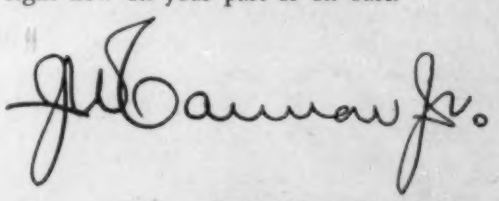
The business problems involved in running a college or university will never be entirely solved. With continued cooperation of those in the field we hope to publish material which will throw some light on those problems that are most pressing and widespread. To this end suggestions and criticism will always be appreciated.

For Future Reference

MANY READERS HAVE EXPRESSED A DESIRE FOR BOUND copies of the first 12 issues of COLLEGE AND UNIVERSITY BUSINESS. They would like to have the first and future volumes available for reference use in a central business office or in the college library.

Stringent restrictions on paper stock prevented us from printing each month the extra copies necessary to supply colleges with bound volumes from our own stockrooms. We can only suggest that each institution assemble from the desks of its business officers one complete set of the first 12 issues and send them to a local bindery.

The paper shortage continues unabated so that we cannot promise to set aside copies of the next 12 issues to meet any possible demand for a second year's volume. However, we might offer a limited number of bound sets of the issues, if we had an idea of what the demand would be. The estimated cost for a volume in a distinctive library binding would not exceed $5. May we hear from you if you would like such a volume. No obligation right now on your part or on ours.



PUBLISHING DIRECTOR

ADMINISTRATORS CAN SOLVE

JOHN DALE RUSSELL
Director, Division of Higher Education
U. S. Office of Education

A REVIEW OF THE MAJOR PROBLEMS facing higher education might lead one who is unfamiliar with higher education in the United States to conclude that this level of the school system must surely be in a grave condition. Those of us who are close to the situation, however, know that problems are perennial. The specific issues change their form from time to time and the setting of the problems changes, often rapidly, but the basic questions remain much the same year after year.

ENROLLMENT TRENDS

I shall enumerate several factors that must be taken into account in making predictions of future enrollments.

The first is the number of veterans who will want education. Slightly more than a million veterans were enrolled in institutions of higher education in the autumn of 1946. The evidence is that these are only a fraction of the number who will eventually enroll. The Veterans Administration has recently reported that 40 per cent of all the veterans have applied for and received certificates of eligibility for education under Public Laws 16 and 346. Total applications at the end of February were reported to be 5,842,290.

A second factor is the general tendency for more and more young people to go to college. If you plot the enrollments from 1933-34 to 1939-40 on a time-series chart, lay a ruler down on these points and note where the ordinate for 1950 intersects this projected line, you discover an enrollment figure of 2,200,000. In other words, if there had been no war and no veterans with educational benefits and if trends between 1933-34 and 1939-40 had continued for the next decade, there would have been 2,200,000 students in our higher institutions by 1950. If you plot college level enrollments back to 1900, however, you find that the line takes the form of an accelerating curve, suggesting that the straight-line method of projection used in reaching the figure of 2,200,000 is too conservative. If the curve for enrollments between 1900 and 1930 is projected to 1950, an enrollment of more than 3,000,000 would be predicted for that year.

Another factor is the trend in the birth rate. The decreasing birth rates, characteristic of the late 1920's and the 1930's, will result in a decreasing number of persons of college age up until the middle of the 1950's. What effect this smaller number of persons in the college age group will have on enrollments is difficult to forecast. At first it seems natural to assume a corresponding decrease in college enrollments but it is highly probable that, with fewer young people to educate, society will decide to educate a larger proportion than ever before at the college level.

The period during which the college age population will be at a minimum corresponds exactly to the time during which the heaviest loads of veteran students will have to be carried. Our general conclusion is, therefore, that the effect of the birth rate on college enrollments up to 1955 can be ignored in predicting future trends in numbers of students for two reasons: (1) because the direction in which the decline in birth rate will affect normal college enrollments is not known and (2) because any effect of the birth rate toward a reduction in numbers of college students might easily be offset by the provisions of education for veterans and by the general social trends toward an increase in the percentage of the population who are attending college.

Considering all the factors in the situation and assuming no new elements enter the situation, our best estimate is that total enrollments in institutions at the post-secondary level will reach a figure of 3,000,000 students by 1951. Our opinion is that there will be an increase in 1947 of about 15 per cent over the 1946 enrollments and that the rate of increase will slow down thereafter. Possibly something approaching a plateau in the curve will be reached in 1952 but by 1956 another upward trend should begin, which will continue at least ten or twelve years, or until the latter part of the 1960's.

ADMISSIONS POLICIES

The number of young people who would like to continue their education beyond the secondary school is almost certain in the future to be larger than the capacity of the institutions to care for them. Every college and university, therefore, has the problem of selecting those whom it will admit. It is a fundamental principle of higher education that the institution is responsible for selecting its own students. In this respect higher education differs from all other levels of education. There has been some encroachment on this principle in recent years and whether institutions will be able to continue to have their own way in selecting their students will depend in large part on the wisdom displayed in determining the method of selection.

The great demand for higher education, in view of our relatively inadequate facilities, requires some atten-

From an address before the National Conference on Higher Education sponsored by the Department of Higher Education of the National Education Association.

HIGHER EDUCATION'S PROBLEMS

RECOGNITION OF CRITICAL NEEDS AND PLANNED STRATEGY ARE KEYS TO SOLUTION

tion to the equalization of educational opportunity. There is an appalling waste of talent in our society because of the failure to make sure that the most capable young people get opportunities for higher education. As you are aware, measures are now being considered, both in the federal government and in several states, to provide scholarship assistance to a substantial proportion of the high school graduates of the highest levels of ability.

In addition to the selection of students on the basis of economic ability, there are other forms of restrictions on college entrance that are socially unwise. It is widely believed that some institutions discriminate against the admission of certain groups on the basis of race or religion. In New York State, legislation has been considered to penalize institutions of higher education that maintain discriminatory admission policies. States that legally require the separation of the races for education have a grave responsibility, repeatedly announced by Supreme Court decisions, to see that facilities for Negroes are not less adequate than are those that are provided for white students.

FINANCING HIGHER EDUCATION

Higher education in this country obtains its financial support from four principal sources: (1) student fees, (2) philanthropic gifts, (3) endowment earnings and (4) appropriations of public funds.

If we were not accustomed to the practice of supporting higher education by student fees, I am sure it would seem a curious policy for a democratic society. We do not charge fees in our publicly supported elementary or secondary schools and if higher education is to serve democratic purposes it should be equally as free to capable students as are the lower levels of education.

In our early state constitutions here in the Middle West, the intent was clearly to have a tuition free public school system. The Indiana constitution of 1816, for example, explicitly instructed the legislature to set up an educational system extending from the elementary school through the university "wherein tuition shall be gratis and equally open to all."

In actual practice this goal has never been achieved in our system of public education. Instead, the charges to individual students have continued to rise steadily. In recent decades the rate of increase in student fees has been more rapid in publicly controlled institutions than in those that are privately controlled, although the publicly controlled institutions still have lower base rates than most privately controlled colleges and universities have.

Philanthropy has steadily declined in the share of the total support provided higher education. Although the amount of philanthropic gifts has increased greatly in the last six or seven decades, the increase has by no means kept pace with the expansion in the services rendered. The efforts of several generations of college and university presidents have been devoted chiefly to the raising of endowment. Without doubt, the requirements of the accrediting agencies have given impetus to their efforts.

The present low rates of income on invested funds and the probability of low rates for a long time in the future now make it a questionable policy to devote much effort to the building up of large endowments for the support of our institutions of higher education.

The same effort devoted to the raising of funds that may be applied to current purposes will be much more productive of educational services during the next ten or fifteen years. And the quality and extent of an institution's services during the next ten or fifteen years will do more, at any one time, to assure its future than any accumulation of endowment assets.

It is obvious that the success with which the institutions of higher education are able to serve an increasing enrollment will depend to a large extent on the provision of adequate supporting funds.

PHYSICAL PLANT AND EQUIPMENT

There was a time in medieval Europe when it was said that the university was *battu en hommes,* built out of men. We still have to have staff members to maintain a satisfactory program of higher education but both faculty and students seem to require certain plant facilities, by way of buildings and equipment. In modern times the words "college" and "university" popularly connote a group of buildings rather than a collection of scholars pursuing various goals in study and research.

The prospects for increasing plant space are not bright. The federal program of aid is practically exhausted. Even so, it has been extremely expensive, for the provision of these temporary buildings has cost from three fourths to five sixths as much as new construction. New construction, even for the few institutions having the resources in hand, seems almost out of the question both because of inordinately high prices and because of the impossibility of procuring materials in reasonable time.

We shall probably have to care for future increases in enrollments, at least for the next two or three years, without any corresponding increase in

physical plant space. Two methods can be employed to accomplish this end; either offers a practical solution.

One method is to improve the utilization of present plant space. This has already been done in many institutions to the extent that further utilization seems practically impossible but there are still plenty of institutions operating on the basis of a 35 or 40 period week. We must encourage these to extend the working week, despite the howls of protest that will arise from faculty members who think there is a law forbidding classes after 3 o'clock in the afternoon.

The other method of caring for increased enrollments without corresponding additions to plant space is by the further development of institutions that serve students who can live at home. Provisions will simply have to be set up in more large centers of population so that the great majority of the residents of the district can have at least two years of education at the college level while living at home. Local institutions of this kind not only escape the demand for student housing but also are able to utilize other community facilities for the academic program. During the present year, for example, a considerable number of junior colleges have been established in such a way as to occupy the high school building after the close of the regular school day. It is only by providing a greatly extended number of local facilities that we shall be able to solve the problem of building space for the large number of students who will want to attend college during the years ahead.

FACULTY

The expanding enrollment in higher education has created a serious deficiency in the teaching staffs of most institutions. Indications are that it may be several years before the graduate schools begin to produce as many faculty members as are needed to staff the college program. Many colleges and universities are now staffed in part with appointees who do not meet the usual standards for faculty members.

Not only have institutions been forced to employ as faculty members those with substandard qualifications but the truth is that we have not been fair to our regular faculty members in this crisis. Only through the willingness of faculty members to carry heavy overloads has it been possible to provide higher education for all the students we have admitted. Adjustments in faculty salaries have not kept pace with the rising cost of living. The situation is one that obviously cannot continue.

NONCURRICULAR SERVICES

Most educators recognize the fact that students require many services other than those provided directly through the instructional program. These student personnel services, as we have come to call them, embrace a wide range of activities.

The increase that has occurred in enrollments has multiplied the problems in this area. When institutions were small, when the student-faculty ratio was low, when plant space was not crowded, it was often possible to handle student personnel problems on an informal basis. Increasingly, we must rely upon a professionalized direction of the student personnel service and upon people with specialized technical competence for the performance of various services of a noninstructional sort.

ORGANIZATION OF HIGHER EDUCATION

There is a long time tendency in this country toward some form of centralized control over public higher education within each state. Paralleling this trend is the tendency, manifest in many states, to set up voluntary organizations of publicly and privately controlled higher institutions for a cooperative attack on common problems. The type of statewide organization that will best serve the development of higher education is an important political question in this country.

Increasingly, institutions of higher education are brought into contact with other governmental agencies and the relations between the institutions and these other agencies become a matter of increasing concern.

Another significant problem of organization concerns the balance between publicly controlled and privately controlled higher education in this country. In the 1930's higher education was almost evenly balanced, so far as enrollments were concerned, between publicly and privately controlled institutions. The balance had been slowly shifting over a period of years toward a slight preponderance of enrollments in the publicly controlled institutions. I fully agree with the opinion, often expressed, that this nearly even balance is a source of strength to American higher education. It would be most unfortunate if either type of institution were to become the sole possessor of the field. The expansions in enrollment that occur in the future, therefore, probably will be mainly in the public institutions. In such a development we must watch carefully to avoid losing the values we have always believed inherent in our plans for higher education under two differing forms of control.

Another problem in the organization of higher education concerns the size to which some institutions have grown. What the upper size limit is has never been determined by research methods. Research is needed to determine the point at which size begins to interfere with efficiency.

The current pressures from expanding enrollments clearly point to a need for the development of new types of institutions. The junior college and institutions of similar type, such as the technical institutes, seem to represent a pattern that can well be given great encouragement for they have the adaptability required to meet current needs.

Institutions of the degree granting type no longer need fear the development of the junior college as a cutthroat competitor for there are and will be plenty of students for all our institutions to serve. Furthermore, experience in many states has shown that the development of junior colleges improves the enrollments in the upper divisions of degree granting colleges and enables them to concentrate their resources at a level at which the local junior college does not compete.

Expanding enrollments in individual institutions are requiring a reconsideration of their internal administrative organization. A plan of organization that is suitable for a small institution will often be unsatisfactory for a larger one, yet a great many colleges and universities have more or less suddenly graduated from the class of small institutions to the class of large ones without any corresponding change in the structure of their administrative organization. Such institutions should be encouraged to revamp their plans for administration.

ROBERT F. MOORE
Director of Personnel
Columbia University

BETTER SUPERVISION THROUGH *Management Training*

A MANAGEMENT REVOLUTION IS TAKing place on college campuses today. Heavy student enrollment demands increased services and facilities; the sequel—higher budgets, million dollar pay rolls, larger employe forces, shorter hours, higher pay—calls for counterbalancing efficiency through vastly improved management from the foremen to the president. Unionization of employes of many institutions, moreover, has presented new problems requiring closer attention and newer technics in dealing with employes. Running a university is truly a big business today.

We are taking steps at Columbia University to meet this problem of achieving better management in our maintenance and service departments by recognizing that the impetus must come from the top and filter through every level of supervision to the employe. Management energy is like atomic energy; it radiates from a central nucleus. Some activating element, however, must be added to start the chain reaction and a management training program serves as an activator.

There is nothing new about our management training (usually termed "supervisory training" elsewhere) except that it was a new venture at Columbia. To be sure, we are in the business of educating and training students—we even give courses that teach how to supervise—but we had never undertaken a training program for our entire supervisory and management force. We prefer to call our program "management training" in order to emphasize that our supervisors and foremen are a part of management.

We engaged two training specialists to conduct the management training program: Frederick G. Lippert and Robert J. Shotter, both men with long experience in industry and as naval officers. Mr. Lippert led the executive sessions and Mr. Shotter, the supervisory groups. For the latter, a conference room was set up with a U-shaped table, open end facing the discussion leader. The participants sat on the outer side of the U so as to face one another. This arrangement stimulates a cross fire of discussion, a fundamental requisite of the conference method of training.

Fifty supervisors and 11 members of our executive group participated in the program. The 50 supervisors were divided into two groups, each attending 12 sessions of an hour and a half each on university time. The executive group met for five two hour sessions to follow the progress of the training program and to be exposed, thereby, to a review of the fundamentals of supervision. As one supervisor commented, "I got a lot of satisfaction from having my superiors take the course because they needed it!"

The training program, while it included the material of J.I.T. and J.R.T. (job instruction training and job relations training) made famous during the war, was much broader and more comprehensive. In general, it covered the following outline, which was used by the discussion leader, Mr. Shotter.

OUTLINE OF PROGRAM

Qualifications of Supervisor

Supervision is a trade in itself, the tools of which are people. The supervisor must acquire skill in handling his tools. Basic qualifications to be developed are:

1. Knowledge of the job.
2. Ability to transmit that knowledge.
3. Active interest in people.
4. Willingness to assume responsibility.
5. Cool, calm and collected manner.

(Others brought forward by the group are added but it is shown how they all tie in with one of the foregoing.)

Duties of Supervisor

(All may be lumped under one of the following headings.)

1. To know his men.
2. To plan his work.
3. To instruct.
4. To cooperate.
5. To maintain discipline.

To Know His Men. The four basic motivations to be developed and discussed are: (a) desire for recognition, (b) desire for self expression, (c) desire for security and (d) desire for change. Knowing and understanding these motivations, what should the supervisor endeavor to know about his men?

To Plan His Work. The steps of the "engineering approach" to a problem are developed, the "engineering approach" to the supervisor's job being applied, and a list of the points is included in "planning the work."

To Instruct. Giving instructions or directions is a matter of transmitting thoughts and skills from one mind and pair of hands to another's mind and hands. The four step method of instruction is developed and applied by a series of demonstrations. (Application of accident prevention principles is included in the demonstrations.)

To Cooperate. Cooperation, in the practical sense, is "working together, with give and take on both sides, for the common good of the enterprise." With aid of cases, there is developed a list of actions that discourage cooperation and encourage cooperation.

To Maintain Discipline. "Discipline is a state of good order resulting from the impartial enforcement of existing regulations." Using cases, the following are developed: a list of actions by the supervisor that hurt discipline and a list of actions by the supervisor that build discipline.

A definition of "grievances" is developed. With aid of "cases," the steps to be followed in settling grievances are developed.

A general summary establishes the interrelation of all points that have been covered.

PROGRAM IN OPERATION

A recorder from the personnel office attended each session to take minutes; these were distributed as the basic material of the course. Every point was developed by the supervisors themselves. In their own way and in their own language, they exchanged experiences that lent dramatic support to the principles being discussed.

While it is too early to evaluate the immediate results of the program, we are certain that it was worthwhile. There are current evidences that supervisors are applying information and principles from the course in their daily work.

We requested anonymous comments at the conclusion of the sessions. One supervisor wrote: "I got a great deal out of the course. It was nice to meet with those from other departments in the university and at every session something came up which proved helpful and which I endeavored to put into practice. It was often interesting to learn *why* I had done the things as I had. Many times I found I had handled situations as we were taught in this course, without realizing why I had done so. I began to analyze my motives and methods and, as I continue to do this, it should prove beneficial to those whom I supervise, as well as to the general management of my department."

Another supervisor asked for more frequent meetings: "I have found the talks very helpful and would like to see them continued. I also feel that the university would gain if we had a meeting once a month with the higher ups and the supervisors where we could talk over our problems."

While still another was hopeful that some good would be done on a higher level: "The university in underwriting this course shows that it is making a sincere effort toward a better understanding of human relations because, at the present time, not one of the things mentioned in this course, applicable to making a good supervisor, is practiced by management toward the supervisors."

An interesting and important by-product of the program was the esprit de corps developed through the opportunity to meet supervisors from other departments and to become better acquainted with them and their work. Their knowledge of the operations and problems of other branches of the university was greatly broadened. In fact, so friendly did members of the group become that they ended the sessions with a party.

Another by-product was the information picked up in meetings concerning failure of the university to establish, clarify or publish certain policies and procedures necessary to the daily operation of departments.

As a windup feature of the sessions, a luncheon was given to the whole group at which H. McAlpin Schley, comptroller of the university, discussed the broad phases of the work of the university, its organization and how each department fitted into it. The aim here was to give each supervisor a real sense of participation in the important work of the university.

We believe that this program is only a beginning, that it must be followed up in order to achieve permanent and continuing effectiveness. We expect no magical results from the sessions, as such. We shall build upon this foundation by frequent supervisory meetings within departments and by occasional group conferences with the comptroller and directors. Along with this program of conferences, a merit rating plan is being installed through which we expect to know our employes better.

A few words of advice to others who may undertake such a program and wish to benefit by our experience:

Keep your groups small, no more than 15. Through circumstance, the Columbia groups ran 25, which was unwieldy and slowed up participation.

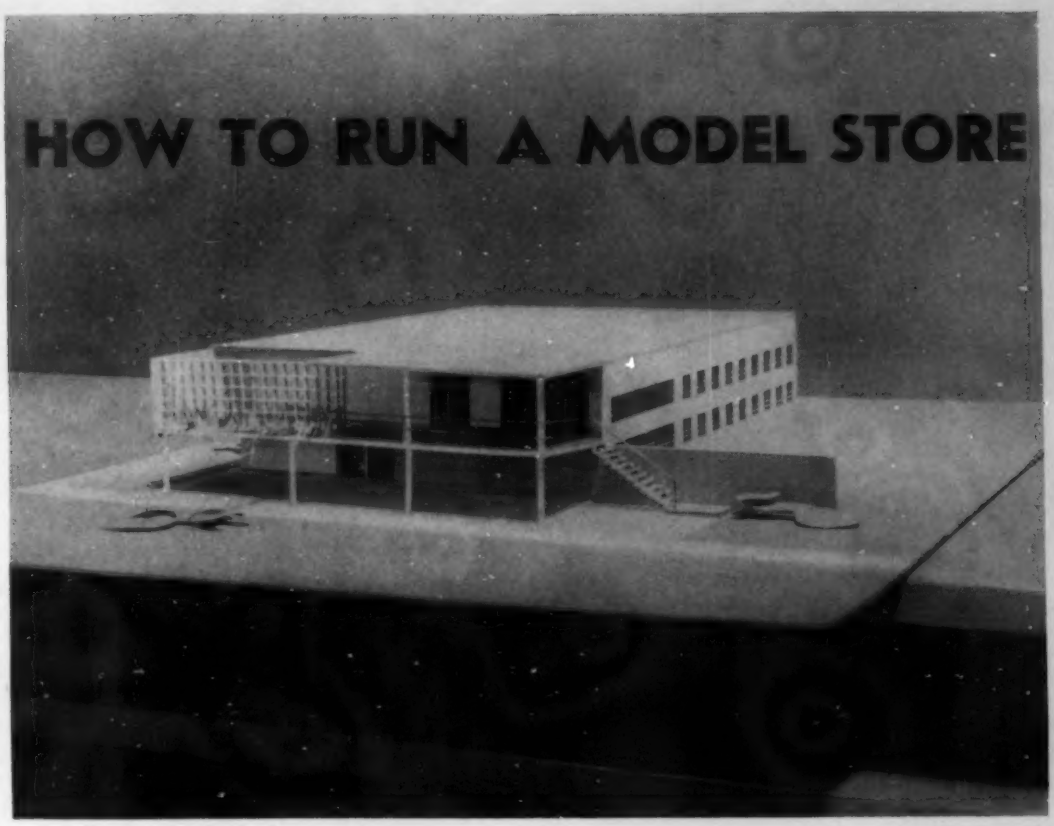
Assign to a special group those with previous training. Many of our dining hall supervisors had college background and supervisory training as a part of their professional studies. This caused them to be impatient with the course and with those who were going through for the first time. Needless to say, however, this group will benefit by training if it is designed more directly for its particular needs.

Be sure to orient the conference leader. If a training man is brought from the outside, he should be briefed carefully concerning the work of the departments involved and, if possible, given a tour of the campus. In this way he will be more familiar with the work of the supervisors he is training.

You must expect a slow start. Our group, including top management, was slightly skeptical about the program, the time and the expense involved. As each successive meeting took place, however, members became more and more interested and a few were truly enthusiastic.

We were told in this course, "If the learner hasn't learned, the instructor hasn't taught." I would add, "If the worker hasn't worked, the manager hasn't supervised."

HOW TO RUN A MODEL STORE



JOHN RICHTER
Manager, Tulane Bookstore
Tulane University

LET US CONSIDER THE COLLEGE STORE from two points of view: (1) a building or room in which there are counters, shelves, merchandise, desks, employes and a system for serving customers and keeping records and (2) a spirit or an attitude on the part of the college administration, the store manager and the store employes.

Without the physical structure there would be no store of any kind, poor, indifferent, good or excellent. The college store philosophy is also an essential for successful operation.

Before we can think intelligently about the operation of the college store, before we can consider a philosophy for the college store, we should establish ourselves on a common ground of understanding.

Essentially, the college store is an institution that has no further justification for its existence than service to its school, its students, its faculty and its community.

When the store is considered in the light of the diversity of its merchandise it can be likened to a miniature department store for it is within its province to sell anything that is needed or might be desired by the student so long as it is consistent with good taste and within the bounds of the regulations and policies of the school.

Yet the college store is vastly different from a miniature department store. For the most part it sells merchandise and offers services that an average, commercial, profit motivated store would not consider. For example, when a book is required by a professor another title on the same subject will not do, nor will a previous edition suffice. The college store is faced with the problem not only of obtaining merchandise but of procuring exactly the right merchandise at a particular time. Furthermore, the merchandise must be in sufficient quantities to meet a previously unknown demand.

As a class, institutional stores of one kind or another make up the largest group of college stores. Of institutional stores, the type most prevalent is the institutionally owned and operated college store and it is this type with which this article is concerned.

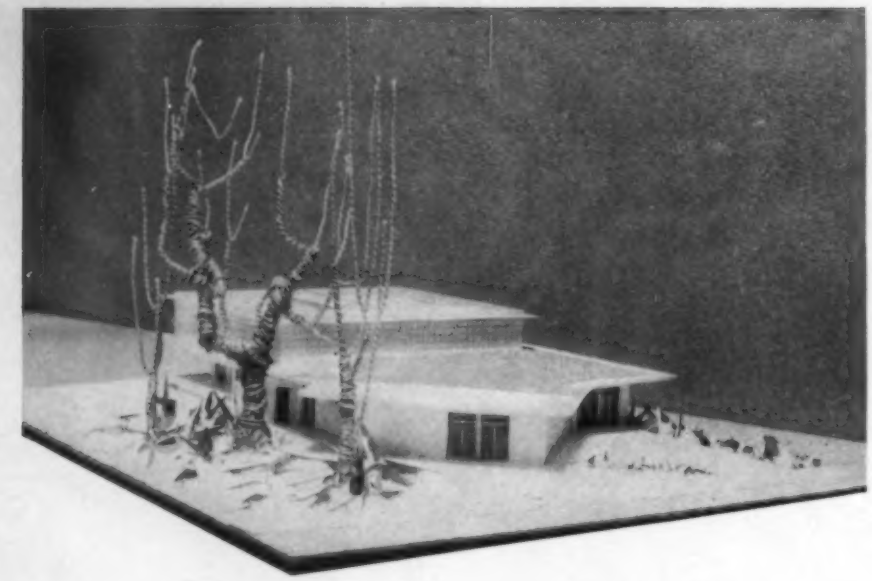
Other types of institutional stores are the institutional cooperative and the privately owned store operated on the campus as the official store. Other classes of college stores are the privately owned off-campus stores and the cooperatives.

What is the function of the college store? Unless as in those isolated instances when profit making to aid the general fund of the school is the chief motive, the primary function of the college store is to procure and distribute the textbooks and classroom or educational supplies required. This is practically the only justification for its presence on campus. Unless the college store discharges this primary function adequately, it is not fulfilling its obligation to its students, faculty or school. The degree of efficiency with which the college store discharges this function is dependent upon the abilities of its staff but, even more, upon the state of mind or attitude of its organization.

There are some secondary functions important enough to merit sincere consideration. These will be mentioned at random and not in order of their importance.

1. As the office supply depot or depository for college and faculty offices.
2. As the sales agent for all campus retail sales.
3. As a medium for the building of school spirit or school loyalty.
4. As a classroom teaching good buying habits.

From an address presented at the 1947 annual meeting of the Southern Association of College and University Business Officers.



5. As a display window for the school.

6. As an experimental laboratory for advanced students in commerce, architecture, interior design and similar fields.

7. As an aid to student employment.

8. As a publisher

9. As a means for increasing scholastic endeavor through the sponsorship of educational competitions.

The efficient college store is one that performs adequately its primary function to the usually lightly considered satisfaction of the business office. It procures books and supplies in a passable fashion and distributes these books and supplies in an honest, business-like manner. The store is not outstanding; in fact, it might well be drab and uninviting, yet it is efficient.

The successfully operated college store presupposes all that the efficiently operated store provides and goes on from there. It is distinctive. It has acquired personality by including in its scope of operations the primary function plus as many of the secondary functions as local conditions permit or advise and it is administrated by a happy, loyal, capable staff.

This store has a sparkle. It radiates good will. It has won the approval of the students; the faculty is proud of it. The staff is courteous and helpful. Inside there is much activity mellowed by good feeling among employes and manager. There is a spirit of loyalty to the school. Everyone, including visitors to the campus, likes to go into this store. A spirit of cordiality and competence pervades it.

The first major step toward a successful store is the employment of a capable manager. The qualities to be sought in a capable college store manager include:

1. Sufficient business knowledge and experience to conduct the fiscal affairs of an establishment its size.

2. A professional pride in the supervision of a college store.

3. Sufficient experience in college store operation to have a working knowledge of the tremendous diversification of details.

4. An understanding of diplomatic service to others and a willingness to work long and hard in service to students and faculty.

After the services of a capable manager are obtained, he must be provided with three tools with which to operate a successful college store:

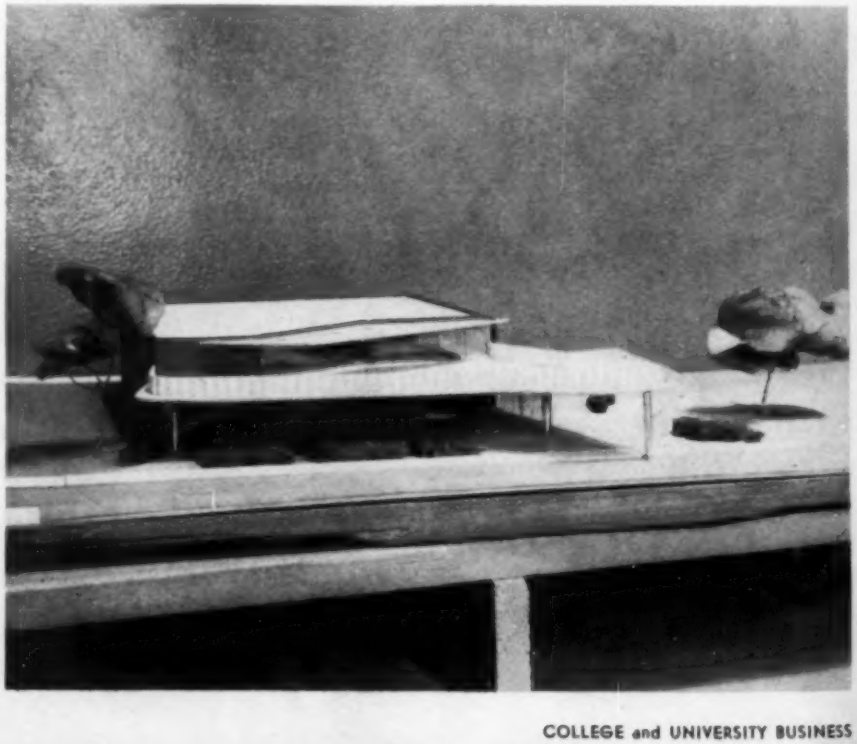
1. A long range program outlining the functions of the store and the method of arranging for these functions. The program should be inclusive yet flexible. It should coordinate policies and routines of the college store with those of the school.

2. A capable staff or organization compensated in a manner consistent with the quantity and quality of the work performed.

3. Quarters, facilities and equipment necessary for adequate presentation and comfortable accomplishment of the program established.

The major point of policy to be established is simple. After a capable manager is employed and after this manager is supplied with the necessary tools, he should be charged with the responsibility of accomplishing the program outlined. However, the manager can discharge this responsibility only when there are freedom of authority from business officers and administration and full cooperation.

The college store performing the many functions within its legitimate scope is sufficiently important to the modern program of education to warrant mature and sincere consideration by administrative officers of every school. It is important enough to warrant an effort to make it a business institution of a type that will bring credit and benefits to the college.



YOU NEEDN'T "THINK SMALL"—

EVEN IF YOU ARE SMALL

FLORENCE HOTCHKIN
Treasurer
Upper Iowa University

"JACK-OF-ALL-TRADES" is an appropriate appellation for the individual presiding over the business office of a small college or university. He, or sometimes she, may be listed in the catalog as treasurer, assistant treasurer, business manager, bursar, or other title that covers a multitude of jobs and capabilities that range from maintenance supervisor through purchasing agent and from controller to assistant to the president. Furthermore, the dawning of each new day may bring new duties and responsibilities never before mentioned in any category heretofore associated with the business office of the institution.

COORDINATOR OF ACTIVITIES

The college bookstore, the budget, the bookkeeping department, the maintenance department, the purchasing department, the pay roll department and veterans' affairs may depend upon the unique individual in the business office to coordinate all of their activities and make them function to the best advantage to the school and yet at as little cost to the institution as possible. Not only must the business officer coordinate them but he must in some instances do much of the detailed work. With the exception of the bookstore and veterans' affairs, these are non-income, yet essential departments of the school; hence, overhead must be kept at a minimum.

Also, in a small school the business officer, no matter what the title, must collect interest, notes, campaign pledges and student notes due the college. This may be done in conjunction with a field man. However, even when this is the case, the records are kept in the business office and many collection letters originate from that point.

The business office in a small college is an active public relations unit within itself. Students in need of financial assistance, parents desiring desperately to help their sons and daughters through school but not knowing exactly how this is to be done approach the business officer for help and suggestions. He or she is usually chairman of the student finance committee, as well as of the budget committee.

By its contacts with business men and salesmen, the business office can make the school known to the four corners of the nation. The impression of the school a salesman carries away with him is the impression he receives through the business officer and the correct impression will do much to build the reputation of the school as well as to get the best goods with a minimum of expense and waiting.

Because of its varied work, it is vital that the business office be staffed by a superior group to help the business officer. A good bookkeeper is essential as is also an excellent secretary; both must be interested in their work and have pleasing personalities for the entire staff is in constant touch with the public and it can do much to help with public relations as well as to act as liaison between the administrative and academic branches of the school.

With such a range of responsibilities and such a small staff (the foregoing is the minimum), the business office in a small college must be well organized with each individual having her own responsibilities and yet prepared and willing to do any job; there must be a minimum of red tape in records and record keeping. It is at this point that many offices lose their perspective. In attempting to run with a minimum staff, they "think small," omit records that they should keep and constantly have one thought in mind: "That is very good, but our school is too small to use it." Right then and there the business office puts limitations upon the entire school.

All records must be kept in such a way that expansion can come and the business office can expand with the trend and not have to readjust its entire system in order to take care of increased enrollment and income. Only a mythical line differentiates the small office that is always ready for expansion and the one that is encumbered with red tape and inefficiency. It is the first job of the business officer to see that this mythical line becomes a definite line, that all red tape and inefficiency are eliminated and that all records are adjustable to changes in enrollment and income. This applies to the keeping of records in every department previously mentioned (and others not mentioned) that may come under his direct or indirect supervision.

JACK-OF-ALL-TRADES

Finally, as a result of the war, another responsibility has been added to those of the business officer in the small college. He must keep up with all legislation pertaining to surplus property, schooling for veterans, and the like. The business office staff has had a tremendous load added. Here again, organization of work and records counts. The handling of veterans' books and supplies is no small job in public relations, in accounting and in record keeping in itself and this must be done in addition to billing and collecting monies from the federal government for the veterans enrolled.

Yes, the business officer in a small college or university is a jack-of-all-trades. If we conclude the saying with "and master of none," there is only one conclusion to draw: the school will always be small; it will not be prepared for expansion, nor will it be the factor in good public relations that it can be. Therefore, regardless of the appellations given him in the college catalog, the business officer in a small college or university must be jack-of-all-trades and master of all he surveys.

TIME SAVER FOR *Veterans' Billing*

C. H. PRATT
Chief Accountant
University of Illinois

AT THE UNIVERSITY OF ILLINOIS WE have worked out a billing procedure for veterans' instruction that has cut down substantially the delays between the close of a semester and the date of billing. We apply it only to Public Laws 16 and 346 but if other laws should be involved, the procedure would correspond step by step with the one to be described.

The contract between the university and the federal government covers payment to us by the government for the following items: veterans' tuition, calculated by the credit hour; fees in addition to tuition, figured on the same basis as fees are assessed against all other students; books and supplies, within limitations, and a 10 per cent surcharge on books and supplies.

For the purchase of books and supplies, the student veteran is provided with a miniature purchase order showing his name and claim number, the law reference and the items ordered; this is good with any vendor and is signed by an officer of the university.

PRELIMINARY PROCEDURE

Soon after the beginning of each semester, a tabulating master card is prepared for each veteran showing his name, claim number ("C. No."), date of eligibility and the law number (346, for example). These master cards are sorted into alphabetical order, and each card is punched with a serial number for sorting and control at billing time.

A work sheet in alphabetical order (double space) is then prepared in duplicate for the use of the registrar; it lists the veterans by name and also shows for each: (1) alphabetical number, (2) his C. No., (3) law, (4) fixed fees. It has blank columns also for: (5) course of study, (6) number of credit hours, (7) tuition amount, (8) irregular fees, (9) amount of combined tuition and fees, (10) books, (11) supplies and (12) total amount for each student.

For each student the registrar fills in the spaces for the course of study, number of credit hours, tuition amount, amount of any irregular fees, the total amount of tuition and fees. Before the close of the semester the registrar returns one copy of the work sheet to the tabulating office where the course of study of each student is punched in his master card, as well as "F" or "P" (full time or part time).

Books and supplies are billed against the university by the vendors on invoices bearing the name and amount for each student and supported by attached small order tickets from the student. After prices have been approved by someone for the university purchasing agent, a check is sent to the vendor as usual and the check number is stamped on each order ticket. Each ticket is summarized to show the amount for books and equipment, the amount for consumable supplies and the total, to agree with the amount shown by the vendor on the invoice. These tickets then go to the tabulating office where a card is punched for each ticket to show the amount for books and equipment, the amount for supplies, the claim number, the law number and the number of the check that paid the vendor covering that ticket. These cards are listed by check number.

The list is returned, with the tickets, to the accounting office for proof with the original invoice. When the list has been found correct, it is signed by the accountant and returned to the tabulating office. The tickets are filed in the respective students' enevelopes in the office of the dean of men.

Deduct cards arise in all cases of refunds (by the student or by the vendor) and are x-punched for subtraction in the usual manner.

A control account is kept for each law. The tabulating cards for books and supplies are filed temporarily by check number. At monthly intervals the books and supplies cards are reconciled with the control accounts, a tabulated report being used that shows only the check number and amount. After each monthly reconciliation with the control accounts, the books and supplies cards are sorted and filed by claim number.

From the time the work sheet is first prepared until the end of the semester, the registrar has made all necessary changes on the second copy. On the last day of the semester the registrar returns to the tabulating office this second copy of the work sheet, showing all changes affecting the amount owed by the government to the university. A line indicating any irregularity is marked in red.

PROCEDURE FOR BILLING

The billing process requires five cards for each student so as to show the data required on government V.A. Form 7611 (with minor approved changes).

On card No. 1 the student's name and alphabetical sort number are reproduced from the master card. No. 1 card is gang-punched to show contract number and given a No. 1 punch for later sorting and billing.

No. 2 card is reproduced from the master card to show the alphabetical sort number, claim number, law number and gets a No. 2 punch for sorting and billing.

No. 3 card is reproduced from the master card to show the alphabetical sort number, eligibility date, course of study, whether full time or part time, and is gang-punched No. 3 for sorting and billing.

On No. 4 card the alphabetical sort number is reproduced from the master card, and the entire deck of No. 4 cards is gang-punched to show the opening and closing dates of the current semester, as well as given a No. 4 punch for sorting and billing.

The books and supplies detail cards are in claim number order without an alphabetical sort number; but the alphabetical sort number is needed for the billing process. The master cards are sorted back again into claim number order. The master cards and the detail books and supplies cards are merged in the collator, unmatched cards being rejected. Using the merged cards and also comparing the claim number, a clerk summary-punches the detail books and supplies cards into a new card (which becomes No. 5) and at the same time the alphabetical sort number is summary-punched from the master cards into the No. 5 cards. No. 5 cards are then interpreted. Both the No. 5 cards and the master cards are then sorted into alphabetical order on the alpha sort number.

No. 5 cards are listed (double space) to show the alphabetical sort number and the amounts for books and supplies. This list is superimposed on the work sheet so that, by matching the alphabetical sort number, the amount appears on the proper line for each student. As the University of Illinois does not have a multiplier, the total amount column on the work sheet is completed by hand, a duplex adding machine being used so as to show page totals at the same time. The work sheet is now complete.

All remaining fields on the No. 5 cards are hand-punched from the work sheet. During this process there are laid aside all No. 5 cards that are for students for whom the work sheet shows irregularities. This results in two sets of No. 5 cards: regular and irregular, each in alphabetical order.

The No. 5 regular cards are matched in the collator with all cards Nos. 1, 2, 3, 4, all irregular cards Nos. 1, 2, 3, 4 being rejected. Each set is in alphabetical order.

At this point the No. 1 regular cards are gang-punched to show the billing date.

The No. 2 cards, regular and irregular separately, are sorted by law number.

No. 2 cards are then matched with No. 5, No. 4 and No. 3 cards. In matching with No. 1 cards, the No. 1 and No. 2 cards are also merged so that No. 1 card is ahead of No. 2. Cards Nos. 3, 4, and 5 are merged in that order with Nos. 1 and 2.

As each billing is to cover 100 students, the cards are divided into bunches of 500 each. They are then listed on V.A. Form 7611, being ejected on the alphabetical sort number. After each 100 sheets have been listed on V.A. Form 7611, all totals are taken by hand. Before the government voucher jacket form for billing is completed, 10 per cent of the amounts for books and supplies is added and included in the billing in accordance with the contract. This voucher jacket is made on a typewriter and is sent to the V.A. office, supported by 100 of V.A. Form 7611. One copy of the billing for each student is filed with the registrar, one copy is filed in the veteran's envelope with the dean of men, one is kept by the business office and two are sent to the government.

In irregular cases the following additional steps are necessary.

The irregular cards at this time are in ten decks: by law number and by card Nos. 1, 2, 3, 4, 5. Taking each set of cards separately and following the registrar's work sheet, a clerk hand-punches any irregular cards.

For irregular fees (special graduation fees, for example), an additional card is punched for each such fee; it shows the proper alphabetical sort number and the amount in the field for tuition, with an alphabetical explanation in the field for the name; it is also punched as card No. 6 and No. 7 in the set.

Irregular cases are listed for billing in the same manner as regular cases.

For all regular cases, this billing process can be completed within two weeks after the corrected work sheet is submitted by the registrar. This is a substantial gain over the former procedure, which involved a delay of from three to six months between the semester close and the billing date.

SCHEDULE
OF
EDUCATION OR TRAINING UNDER PUBLIC LAWS 16 or 346

Contract No.

Name and address of school here

Date of Billing

CHECK APPLICABLE BOX
☐ PUBLIC LAW 16
☐ PUBLIC LAW 346

CHECK APPLICABLE BOX
☐ FULL TIME
☐ PART TIME

BILLING UNITS OF COURSE

STATEMENT OF CHARGES DUE

TUITION AND FEES

These spaces revised to agree with local fees involved

REMARKS

V.A. FORM 7611 is shown above. At Illinois, five cards are prepared for each student in order to provide the required data for this form.

WHERE WILL THE MONEY COME FROM?

FRANCIS J. BROWN
Staff Associate
American Council on Education

IS FEDERAL FINANCING THE ONLY hope for the financial future of higher education? The answer to this question can be given only in the light of an appraisal both of the future needs of colleges and universities and of the sources of income.

Many estimates have been made as to future enrollment. It is significant, however, that projections based upon enrollment trends made for the President's Commission on Higher Education and the study of the U. S. Office of Education tabulating estimates of enrollment made by 980 college and university presidents come out at almost identically the same figure, that is, an enrollment slightly in excess of 3,000,000 by 1950-51 with a leveling off at approximately 3,000,000 for the succeeding decade. There will be a considerable upturn in the early 1960's when the babies of World War II reach college age.

This projection of enrollment involves a corresponding increase of 50 per cent in the needs of colleges and universities, both in personnel and in physical facilities. It requires at least a corresponding increase in the cost of higher education.

Translated into dollars and cents, this implies a minimum expenditure of $1,500,000,000 annually for instructional and other operating costs. In 1939-40 this expenditure in terms of the present educational dollar was approximately $600,000,000. It dropped to less than $500,000,000 during the war years and in 1946-47 is slightly in excess of $1,000,000,000. Phrased differently, colleges and universities must plan to spend by 1950-51 and continuously thereafter for instruction and operation nearly three times the amount spent prior to the war and 50 per cent more than is being expended this academic year.

In terms of physical facilities, even on the basis of present crowding, institutions of higher education will need to increase their floor space, exclusive of housing, by at least a third. Data from the U. S. Office of Education indicate that the amount of floor space per student has dropped from 200 square feet before the war to 135 square feet this year. If it is assumed that classrooms and laboratories are too crowded now to make effective instruction possible, then some additional amount must be added to the 50 per cent increase indicated.

These general statements can be put in numerical terms. Reports received from 980 colleges and universities state that they now have approximately 160,000,000 square feet of floor space. Assuming only the 50 per cent increase, this entails an expansion of the physical plant for these institutions of 80,000,000 square feet. An estimated minimum cost for new construction is $11 a square foot, making an expenditure for capital outlay of $880,000,000 in only these 980 institutions. A billion dollars in capital outlay is a conservative estimate and these funds must be available within five years!

SOURCES OF CAPITAL OUTLAY

From what source can colleges and universities expect to procure the $1,000,000,000 for capital outlay and a half billion dollars annually for operation? One source is student fees. At present, as in prewar years, for a nonveteran, tax supported institutions receive approximately 26 per cent of their current expenditures from this source. Private institutions receive approximately 60 per cent from tuition and other fees with wide variations among institutions both public and private. At the present time, owing to payments from the Veterans Administration, both public and private institutions are receiving approximately 60 per cent of their operating cost from students, either directly or through the Veterans Administration. This academic year, V.A. payments to educational institutions will amount to approximately a half billion dollars; for the calendar year they will be $770,000,000.

Except for payments by the federal government, the balance of operating costs and all expenditures for capital outlay must come from three sources: (1) state and municipal taxes, (2) income from endowment and investment and (3) gifts. Privately controlled institutions are limited to the last two sources at the present time.

It could reasonably be assumed that publicly controlled institutions in the wealthier states could draw larger sums from tax funds. But data on the varying ability of states to pay for education conclusively demonstrate that the present inequality of opportunity for higher education will increase if the burden of support is left on a state basis.

Incomes to private institutions from investments and endowment are consistently decreasing and there seems no indication that any substantial increase from income from gifts can be anticipated.

Faced by the desperate situation even of this year, institutions have tended to turn to the one flexible source of income, namely, student fees, to meet the rising cost of operation. An increase in fees now will not be seriously reflected in a decrease in enrollment and will not at all affect the enrollment of veterans. *But with every increase in tuition or other student fees, higher education moves one step away from democratic higher education.* For nonveterans and for all students when veterans are replaced by nonsubsidized students, each advance in tuition fees now will intensify the importance of the economic factor in student selection. Such an increase is unwise as to both sound finance and national welfare.

There is only one other source to which institutions can turn and that is to the federal government. Through its income tax the federal government has usurped, and rightly if equalization is to be a principle of reallocation, the major source of income for expenditures in the public welfare. The immediate assistance

which the federal government should give to higher education is a grant-in-aid program for permanent construction of educational facilities other than housing. Buildings must be made available if the institutions and the federal government are to meet their joint obligation to the veteran. Companion bills to provide such assistance, S. 971 and H.R. 2845, are now before the Congress.

One needed form of long range assistance is through the continuation of a program of national scholarships somewhat comparable to those now provided through public laws 346 and 16 for veterans. Such scholarships and fellowships should be available to students of ability regardless of the subject matter fields in which they are interested or the type of accredited institutions in which they enroll, should be adequate to cover the full cost of instruction and should be sufficient in number to assure able leadership in all fields important to the national well being.

GOVERNMENT'S RESPONSIBILITIES

The answer to the question proposed at the beginning of this article seems then to be that the federal government has a definite responsibility to assist colleges and universities in providing physical facilities other than housing for the education of the veteran. If higher education is conceived of in terms of its service to the nation then some permanent policy of grants-in-aid for construction may well be justified. The federal government has a responsibility to provide scholarships and fellowships to assure adequate leadership in all fields contributing to the welfare of our nation.

Beyond these two types of assistance, the federal government may well move into a program of equalizing opportunity for higher education. It should leave to the state the decision as to the best use of such funds but they should be allocated on the basis of equal educational opportunity.

In peace as in war higher education is vital to the best interest of the nation. Policies for more active participation of the federal government in the support of higher education should be developed. But they should be developed only after careful appraisal of the issues involved and be of such a character as to stimulate rather than lessen the sense of responsibility of the state, the community and the institution.

HOW'S YOUR TELEPHONE ETIQUETTE?

IN ORDER THAT USE OF THE TELEphone may reflect to the credit of the institution using it, the following "rules of the road" have been suggested by telephone company officials.

WHEN TELEPHONING

1. *Be sure of the number.* If you call from memory, you may get the wrong number. Use the telephone directory to save time and to avoid irritation.

2. *Be ready to talk when the called person answers.* Stay on the line until your party answers or until you receive a report.

3. *Allow time to answer.* After you have called a number, give the person called at least a minute to reach his telephone.

4. *Ask if it is convenient to talk.* Inquire of the person you call if it is convenient for him to talk. You would not break into a conference and the same rule of etiquette applies over the telephone.

5. *Speak directly into transmitter.* Keep your lips close to the mouthpiece and use lips freely to form your words.

6. *It is unnecessary to shout.* Shouting will distort your voice over the telephone. Speak in a normal tone.

7. *Try to visualize the person.* Speak *to* the person at the other end of the line, not *at* the telephone.

8. *Say "thank you" and "you're welcome."* The use of such phrases is the way to smile over the telephone.

9. *Be attentive.* The person to whom you are talking will appreciate your listening politely and attentively. You would not interrupt in a face to face conversation.

10. *Use the other person's name when talking to him.* There is no sweeter music to another person than the sound of his own name.

11. *Explain any necessary delays.* The person on the other end of the line cannot see you or what you are doing; he has to depend on what he hears. Excessive waits are annoying, so offer to call back promptly if the information is not readily available. If you must leave the telephone, do not drop it on the desk.

12. *Apologize for mistakes.* When you receive a wrong number, do not bang up the receiver. Apologize.

WHEN RECEIVING A CALL

1. *Answer your telephone promptly.* If you do not answer your telephone ring promptly, the person calling you may decide no one is there and hang up. You may save important calls by answering promptly.

2. *Greet the caller pleasantly.* Remember that you do not know who is calling. Greet the person calling as pleasantly as you would if you were meeting him face to face.

3. *Identify yourself.* Avoid such old-fashioned time wasting answers as "hello" or "yes." Identify yourself, your institution or your department.

WHEN AWAY FROM TELEPHONE

Leave word where you are going. It may save you important calls if you leave word with the person who will answer your telephone where you are going and when you expect to return.

WHEN ANSWERING FOR OTHERS

1. *Ask questions tactfully.* Ask only those questions that are necessary, such as name and telephone number. For example: "I'm sorry, but Mr. Smith is out of the city; may I tell him who called?"

2. *Take the message.* Note the name of the person who called, his telephone number, the time and if he wants to be called. Then repeat the information to make certain it is correct.

WHEN TRANSFERRING CALLS

Signal the operator slowly. Tell the caller what you are going to do, then depress and release the receiver hook three or four times. If you move the receiver hook too rapidly, the operator cannot see the signal. Stay on the line until the operator answers.

WHEN THROUGH TELEPHONING

1. *Who should end the call?* Ordinarily, the person who originates the call ends the conversation.

2. *Hang up gently.* Slamming the receiver may cause an unpleasant noise in the receiver of the other telephone.

LET'S FACE PROBLEM OF *Wages*

MERRILL M. BARLOW
Business Manager
Drake University

THE COLLEGES AND UNIVERSITIES OF this country are being called up to render a social service greater than ever before. In rendering this service, we must be concerned with the morale of our employes, by which I mean a normal, healthy and interested attitude toward university service. In developing such a morale, an important factor is the establishment of a feeling of fair and equitable financial remuneration on the part of the employes.

Adequate salaries have always been a problem in most institutions. In this postwar period, many major adjustments have been made in basic pay and the job is still not done. In most instances, institutions can well review their wage structures. This need for a review of present wage structures with the thought of revision and improvement is especially urgent at this time, the most important factor of this need being the result of a faulty basic structure and failure of administrators to review it constantly.

HOW TO VIEW WAGE SCALE

Other factors are the changed attitude of employes over the prewar period, the present shortage of labor supply, the constantly increasing cost of living and the greatly increased size of the nonacademic staff with further increases in the size of staff clearly predictable. This need for the development of a fair and equitable wage scale is just as vital to the small college as to the large university and should be considered from four major points of view:

1. The relationship of compensation within a given job classification and the relationship of compensation among the various job classifications within the nonacademic area.

2. The relationships to the prevailing or going rates of the community.

3. The relationship to the wage structure for the academic staff.

4. The relationship to the ability of the institution to pay.

The relationships to the prevailing rates of the community and to the ability of the institution to pay are perhaps the most vital factors but the basic starting point in the development or improvement of the wage structure is the relationship of rates within the nonacademic area. To relate the remuneration of the various positions or services within the nonacademic field implies a knowledge of the training, skills, abilities, duties, working conditions, requirements and responsibilities of the various positions or grades of position. This knowledge can be obtained best through the use of job analysis, evaluation and classification.

The philosophy or purpose of job analysis, evaluation and classification is to assure us that we are paying for the job being done, to evaluate one job in relation to every other job and to avoid discrimination among employes. An objective analysis should be the basis of reaching agreement among all concerned. No job analysis system will work unless management from top to bottom can be sold to believe in it.

It is not my purpose to discuss the technical methods of procedure in the development of job analysis, evaluation and classification. The actual plan is not of major importance; the important thing is to study the job from all angles and to understand it. It is fundamental that the job be studied as a job without reference to the person involved. The job itself may well be considered both objectively and subjectively.

The major advantages of job analysis, evaluation and classification are briefly that they (1) provide a basis for equitable compensation, (2) provide a basis for employing the right person for the right job, (3) give the administrator the opportunity to know whether a position is needed, to know what the person is going to do, to know that the pay is not out of line for the job being done and (4) increase employe morale, not only giving the employe a feeling of equitable treatment but also causing him to feel that management knows definitely what it is doing.

The establishment of a job classification may be brought about by the use of an outside service or by the use of institutional personnel. The advantages of an outside service are the availability of skilled technicians, a more objective study and the ability to get the job done within a relatively short period of time. The objections are that it is expensive and that no job classification is ever complete but must be reviewed constantly.

STAFF CAN HELP DEVELOP SYSTEM

The use of institutional personnel seems to result in a greater use of the supervisory staff throughout the institution in developing a classification system and, thus, less of a feeling on the part of the supervisory staff that something is being superimposed from the outside or the topside.

Once a job classification has been developed, the wage scale is related to the classifications. As the wage for a particular job is related to the wage of all other jobs, it is important that neither the highest nor the lowest wage be used as a base.

Our institutions must expect labor problems similar to those encountered in the outside industrial world. The day has passed when a university can expect to live its life apart in an atmosphere of cloistered and academic hush. Our educational institutions are morally obligated to pay the prevailing or going *average* rates of the community. Neither the top nor the bottom of a scale should be used but rather the

From an address before the annual meeting of the Central Association of College and University Business Officers, 1947.

average or the median. In the area of the personnel of the buildings and grounds department, it seems wise to relate wages to the prevailing maintenance rates rather than to the prevailing construction rates.

If the wage structure is lower than the going rates of the community, the institution is not getting the best employes; if higher, it is not getting its money's worth. The job classification should tend to keep things in balance where the going rate of the community for a particular job is out of line in relation to other rates, as well as to eliminate the tendency to pay what is demanded by the applicant.

We cannot fail to take into consideration the relationship of the wage structure of the nonacademic staff and that of the academic staff. Our teaching faculties are conscious of this relationship. Management should not emphasize one against the other. An educational institution should strive constantly to maintain a high quality of teaching service and this can be accomplished only by adequate compensation. While it must be borne in mind that the nonacademic staff represents a means to an end and never an end within itself, the academic field must recognize that Mark Hopkins and the student would be in a difficult position without a log to sit upon; it must recognize the problems involved in the wage scale of the nonacademic staff. Here is a place for the administration to do a competent job of education and salesmanship.

Charles W. Hoff's reports show an average increase of 33.14 per cent over 1940-41 in wages for both academic and nonacademic employes against an increase in living costs of approximately 50 per cent. The range of increase for faculty and administration is from 6 per cent to 250 per cent with an average of 28.63 per cent; for office and clerical staff a range of 7 per cent to 200 per cent and an average of 33.34 per cent; for custodial and maintenance staff a range of 7 per cent to 105 per cent and an average of 37.26 per cent.

A survey made by COLLEGE AND UNIVERSITY BUSINESS and interpreted by Robert F. Moore in the April issue indicates an increase in salaries of 22 per cent over 1945 against an increase in living costs of 22.4 per cent. Thus, while we have kept pace with increased living costs during the last two years, we have yet to overcome the failure of pay to advance in line with the increase in living costs between 1941 and 1945.

PERCENTAGE V. DOLLAR INCREASE

Question is raised as to the higher percentage of increase in the lower paid brackets in relation to the higher paid brackets and in relation to the academic scale. It must be recognized that our present social philosophy does not favor an across the board percentage increase in wages but rather an across the board dollar increase. This philosophy maintains that the difference between the upper and lower levels of income should not be as great as before. Its basic principle is that everyone is entitled to a living wage. We may not agree but this is the democracy within which we live.

In relating percentage of increase comparisons, we must watch out for the fallacy of statistics. In the academic field, for example, as the student body has increased, there has developed a greater predomination of lower rank, lower salaried staff members in relation to higher rank, higher salaried staff which must be taken into consideration where percentage of increase is based on the median salary. The actual increases may be higher than such statistics would indicate.

It has been suggested that one way of ensuring an equitable relationship between wages of academic staff and nonacademic staff is to establish a job analysis, evaluation and classification program that includes both academic and nonacademic personnel. This would be a pioneering if not a revolutionary step. I should not care to pioneer. A cat may look at a king but a personnel officer may not look at an academic position.

It now becomes necessary to consider the relationship of the wage structure to the ability of the institution to pay. This is a most vital and, in many instances, a critical problem. Certainly no institution can expect to pay beyond its maximum ability. It is, however, the social and moral obligation of our institutions to pay their employes, both academic and nonacademic, a fair and equitable wage in relation to the many factors involved. Our employes have become accustomed to higher standards of living which are in jeopardy as living costs increase and the value of the dollar decreases. They will not go back to the old standards without a struggle and they should not be compelled to do so.

If my assumptions are correct, then it is essential that we exhaust all possible means of increased income from whatever sources possible. When we have reached the saturation point of income and it is still inadequate to meet the needs, we are confronted with the problem of decreasing salaries or failing to make needed increases on the one hand or of eliminating our least essential services on the other hand. It seems to me the latter is preferable.

Regardless of how the individual institution may solve its problem and what the end result may be, it is essential that we face squarely the problem of equitable wage structure for nonacademic staff and that we develop definite policies and a definite plan as the first steps toward solution.

Parade of Plastics

Like war veterans, the plastics appear in growing numbers on every campus. Frances Maisch of Columbia University will tell next month how in their myriad forms plastics may be utilized in residence halls, dining rooms and maintenance departments.

FIVE CRITERIA FOR UNION FURNISHINGS

MICHAEL M. HARE
Hare and Elder, Architects, New York City

IN ANY DISCUSSION OF FURNISHINGS for a college union, the first step must be to spell out what these furnishings are supposed to do for the student, beyond the obvious function of all furnishings.

Furnishings should function as an integral part of the overall scheme and architecture of the building. For this reason it is necessary to reiterate the underlying purpose of any college union building. In addition to the building's physical setup as a leisure time recreation center, the college union must serve an important educational purpose: to educate students in living with one another through means not available in academic courses. The designer of the furnishings and decorative scheme of the union building must strive to produce an atmosphere that students could recreate subsequently in their own homes.

EASY TO MAINTAIN

To this prime requisite of college union furnishings must be added the necessity for design and construction that will result in low maintenance cost and reasonable initial cost. Needless to say, it is not possible to produce the sturdiness required at an initial cost comparable to that of cheap commercial furniture in which maintenance is not really considered.

In the third place, in order to achieve the educational purpose of the union, it is necessary that the furnishings incorporate a flavor of the locale which will bring home to students the richness of artistic tradition of their own communities.

Fourth, the number of dual purpose rooms in a college union building dictates that the furniture achieve a certain degree of flexibility as to its use, if only to avoid the necessity of frequent janitor service in rearrangement and storage to meet the needs of various functions.

Fifth, variety of form must be achieved if the dull appearance of uniformity is to be avoided. By this it is not meant a multitude of designs but rather a sufficient variety to avoid institutional appearance.

To achieve all these objectives in every piece of furniture and in the overall decorative scheme is far from easy. It is obvious, of course, that they will often conflict with one another. It would not be too difficult to purchase handsome furniture made commercially for use in homes and, off-hand, this would appear to satisfy the principal requirement for a union building. Yet, nine times out of ten, this furniture will be unsatisfactory because, being of reasonable cost and being designed for home use, it will not stand up under the extremes of punishment that it must take from the relatively unsupervised activity of the student body. On the other hand, if it is adequate in appearance and also sturdy of construction, the cost will almost surely be prohibitive.

Faced with these difficulties, it would appear wise to try to design a line of furnishings that will fill the bill in a way that commercial furniture cannot do and, by a degree of mass production, achieve furniture of the proper character at reasonable cost. This is a project on which we are presently engaged. There are difficulties here also because of the necessity of introducing local flavor into the designs. It means not only that special fabrics must be designed for each building but also that certain special pieces must be made in sufficient quantity to achieve an individual character for the building, the standardized designs at the same time being used as a backbone of the decorative scheme. Naturally, the object of expressing local art traditions can be helped along by the choice of fabrics of local motif for curtains and, if the budget permits, in the commissioning of murals and sculpture with local history as their subject matter. Furthermore, the problem is complicated also by the requirement that the decorative scheme and furnishings be integral with the building design.

Unfortunately, only too often the appearance of college union buildings, following the frequent pattern of other buildings, has no relation whatsoever to local needs and the contemporary scene in the arts. It is apparent that it is a thankless job to design furnishings tailored to do the job just described when the architecture of the building is imitative of the 18th century and expressive of a manner of living quite remote from that which students will adopt in later life.

REACTIONARY IN POINT OF VIEW

Most colleges, while progressive in their teaching of most academic courses, are reactionary when it comes to practicing on their own campus the ageless principle that works of art, be they architecture, furniture or painting, must be expressive of the way of living of their times. The usual argument in favor of the reactionary view is, of course, that the buildings elsewhere on the campus are in a traditional style of the past. They forget that the great universities of England, for example, are a collection of succeeding styles in architecture which, developed over a period of centuries, blend together with entire success.

Great advances were initiated during the war which, in the years to come, will prove fruitful in the development of furniture both handsome in appearance and low in maintenance costs. These include plastic and glass fabrics and new metals not subject to deterioration or discoloration. For instance, there is now a new process by which metal and wood can be glued together.

It is apparent also that, from a sanitary and maintenance angle, some of the new rubber paddings will prove more than adequate substitutes for conventional upholstery. New substitutes for leather will probably result in a lower cost and a longer life than either leather or leatherette can give.

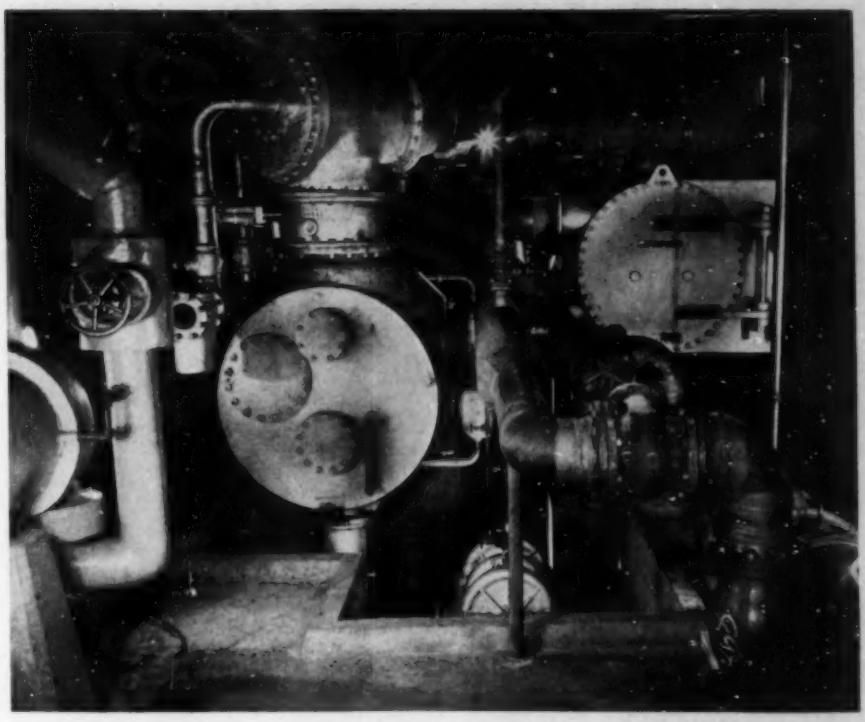
At present, however, although research and initial experience have shown that these new methods and materials can be used, many of them are still subject to question until more experience in their use is gained. Of course, unless we try these new

materials, we shall not know how they work; if we do try them, we may have some sad and unforeseen experiences. A compromise must be effected.

Another field of furnishings in which there have been great advances is that of lighting. This comes particularly to mind because the overall adoption of so-called "modern" methods of lighting will result in a most unsatisfactory overall lighting scheme. "Modern" should mean not only new methods and new gadgets but designs expressive of a contemporary yet pleasant way of living.

To adopt cold cathode tubes as a lighting scheme for a college union building would be a great mistake even though cold cathode results in even distribution of light and low current costs. As yet, fluorescent lighting has not successfully achieved the warmth of incandescent lighting. Lighting designers will tell you that fluorescent lighting and its variations can be tinted to achieve a variety of color tones. To my mind, however, the best imitation of sunlight is the incandescent light. Some of the advantages of both methods of lighting can be obtained by a mixture of the two in concealed locations. This matter is brought up only to demonstrate again that the acceptance of modern scientific methods does not necessarily mean the attainment of a good contemporary art form.

One last word on the subject of "good taste." At the risk of being looked at askance by faculty wives throughout the country marshaled by Mrs. Emily Post, I venture to say that the term "good taste" has got us into a peck of trouble during the last hundred years. It has come to mean adherence to the conventions set up by a nebulous group of supposedly well educated people. "Good taste," therefore, is essentially imitative and, in many instances, results in the regurgitation of past styles with no relation to contemporary life. Good design must always relate to ways of living and ways of living, through the centuries, change slowly. Therefore, they do not justify extremely radical departures from the conventional. Nevertheless, the direct imitation of the past results in anemic, perhaps unobjectionable, but always spurious art forms. I plead, therefore, that we abandon the idea of "good taste" as a criterion and require instead that furnishings be subject to the same criteria as all other art forms.



EVAPORATOR AND PRIMARY CONDENSER

NEBRASKA'S NEW BUILDINGS COMPLETELY AIR CONDITIONED

LAURENCE F. SEATON
Operating Superintendent, University of Nebraska

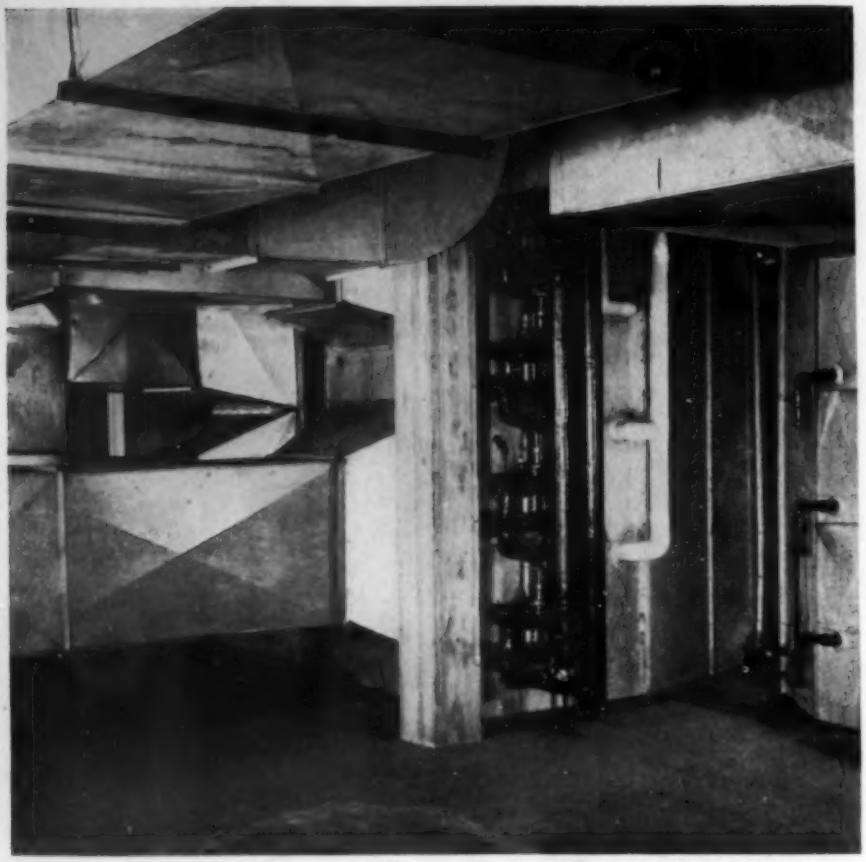
WHEN THE TERM "AIR CONDITIONING" is used, the average person thinks of a cooling system in operation. It is just as important, however, to have a healthful air condition when heat is needed.

As is well known, the human body has its own cooling system. Its principle of operation is largely that when a liquid is changed into a gas or evaporated, heat is used to accomplish the result. When body moisture is evaporated, heat is taken from the surface of the body and a cooling effect is apparent. If the air is dry a higher rate of evaporation is effected. It is therefore evident that if the relative humidity of the air is increased, the evaporation of body moisture is lessened and the comfort zone is reached at a lower room temperature. This fact was apparent especially during the fuel shortage when by increasing the humidity a lower room temperature seemed comfortable. For these reasons, during the summer cycle the drier the air the greater is the cooling effect on the body.

At the University of Nebraska, the governing board has issued an order that all major buildings must have provision for an indirect heating and duct system so designed that cooling coils can be installed or provided later.

At present, three major buildings are completely air conditioned, the first one being the union building, constructed in 1938, and the second, the administration building, remodeled and completely air conditioned the following year. The third, Love Library, was built in 1942 at a cost of approximately $1,000,000 with a volume of 2,150,000 cubic feet in its four floors and basement.

Since Love Library is completely air conditioned, an attempt will be made to describe the equipment and installations necessary to control the temperature and quality of the air circulated throughout the building. The heat is obtained from the central



Duct work and coil housing of the cooling unit, University of Nebraska.

heating plant. The steam is generated at 250 pounds per square inch with a super heat of 150° F. The steam is reduced from to 2 to 5 pounds at the building before it enters the heating coils. For the winter cycle when heat is needed the building is provided with both direct and indirect heating, the proportions being approximately 10 per cent direct and 90 per cent indirect.

The functions of the direct radiators are to supplement the indirect system when sudden changes occur and to pick up the temperature in the mornings more quickly. The steam is controlled in these radiators by means of outside weatherstats. Being placed outside the building, these instruments respond more quickly to changing atmospheric temperature; therefore, a more nearly uniform temperature is maintained.

The radiators are so piped that four heating zones are provided, one east, one south, one west and one north, with one weatherstat controlling each zone. This arrangement has added greatly to efficiency since, on a sunny day, much less heat is required for the south side than for the north side.

The indirect heating system consists of heating coils, fans, duct work, dampers, grilles, filters, humidifiers and controls. In this arrangement, copper fin steam coils are placed in a metal housing so arranged that all air provided by the fan is forced through the coils whence it picks up heat and delivers it to the rooms. The air supply furnished to the fans can be taken from the outside or drawn from the heated rooms. In reality, the air is mixed by automatic dampers with only a controlled proportion of fresh air taken in. The indirect heating system is divided into nine separate zones, each one having its individual pneumatic thermostatic control.

While the volume of air furnished to the various rooms is constant, the temperature of the air is controlled by a thermostat located in each zone which regulates the amount of steam supplied to the coil furnishing heat for that particular zone.

Owing in part to the complete automatic control of the temperature, the cost of heating the new library building on an average yearly basis is 32 cents per pound of steam, per degree day, 1000 cubic foot space, whereas the cost of the former library building was $1.37. Consequently, we feel justified in procuring the best control systems in all future buildings.

The humidity supplied to the building is controlled by a steam humidifier located ahead of the heating coils in the ducts. The relative humidity of the air in each zone is controlled by a humidostat, also of the pneumatic type.

A good quantity of the air is maintained by admitting a proportion of brisk outside filtered air. During the fuel shortage there was a tendency to recirculate the heated air and to hold the amount of outside cold air down to a minimum.

In the summer cycle the chilled air is forced into the rooms through the same duct and fan system as that used for indirect heating. The air is cooled by means of separate coils through which chilled water is circulated. By this means the air which is forced through the coils is lowered in temperature. When the temperature of the air is lowered, the dew point of the moisture in part of the air is reached. The water thus formed drops off as condensation where provision is made to drain it into sewer or other disposal. The resulting drier conditions of the air produce a cooling effect on the body since they more readily evaporate the body moisture.

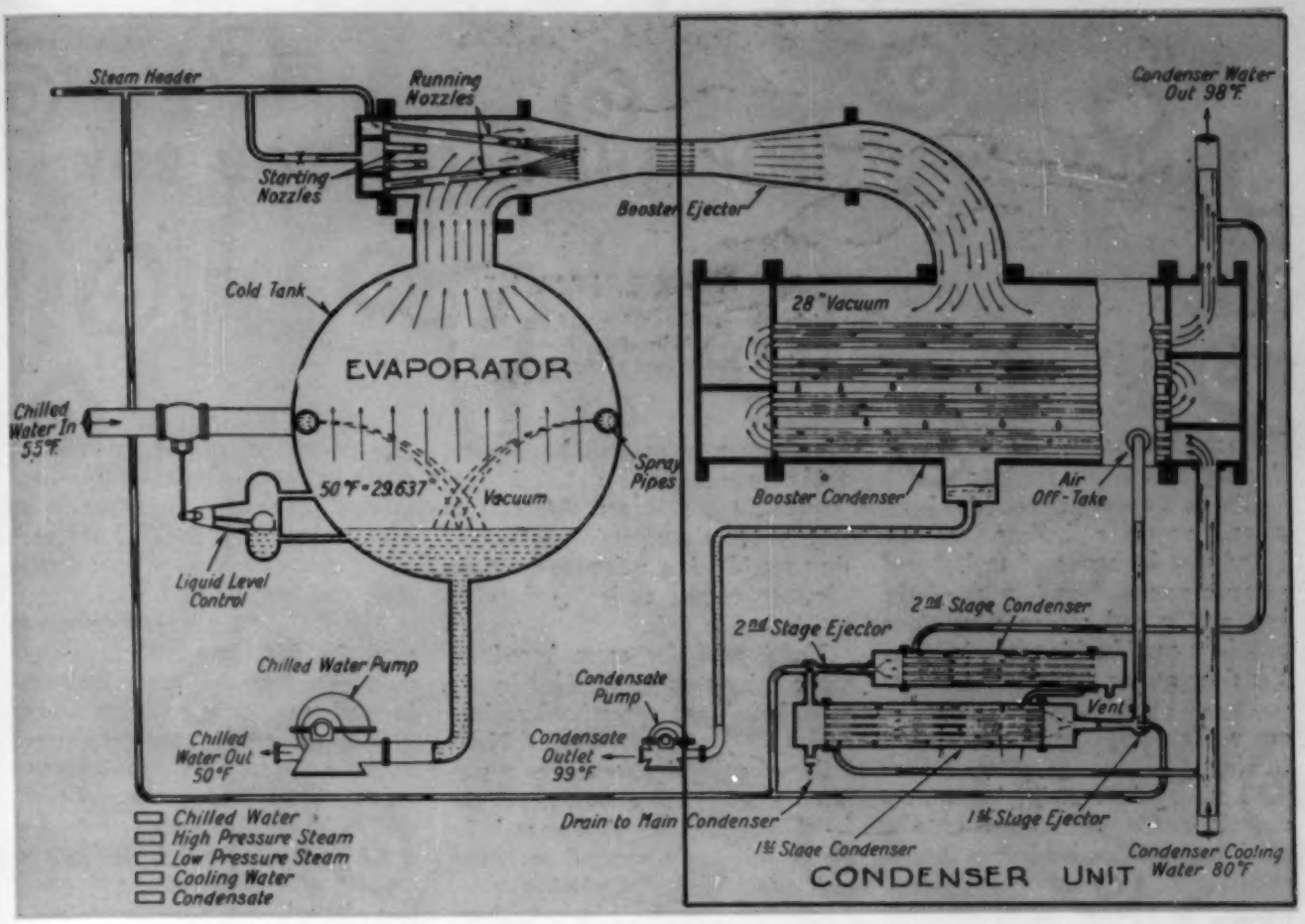
A central control room is provided in which it is possible to regulate the entire heating and cooling system. Equipment is provided in the room whereby the temperature of 17 stations located throughout the building can be ascertained by direct reading. The custodian of the building can thereby observe and control the temperature of the entire building from this point.

STEAM JET PRINCIPLE EMPLOYED

Several methods are in common use to effect a medium for cooling. The commonest is that of circulating city cold water through the coils. There are many cities in which the water temperature ranges from 50° to 60°.

Probably the next most generally used is that of a common refrigerator compressor utilizing a refrigerant, probably F-12 (freon). In most cases the cooling is accomplished by a direct expansion of the gas in the coils around which the air is circulated. In some cases room cooling is effected by chilling water with a compressor and then circulating the water through the cooling coils.

The type of cooler used at the University of Nebraska is known as the steam jet or decalorator. Its principle



Diagrammatic arrangement of the steam jet vacuum cooling unit, University of Nebraska.

is shown in the diagrammatic sketch. The chilled water is circulated through the evaporator. In this tank a partial vacuum is created by means of a series of condensers shown at the right. It is well known that water changes from a liquid to a vapor at a temperature that depends upon the pressure. The lower the pressure the lower the boiling point. It is therefore evident that a portion of the chilled water in the evaporator will change to vapor in the chamber of low pressure. Since no heat is added to cause this change to occur, the heat necessary must come from the water, thus lowering the water temperature still farther. This chilled water from the evaporator is circulated through the cooling coils where it picks up heat from the air passing through the coils and then returns to the evaporator again to be lowered in temperature.

Functions of the condenser are to maintain a vacuum in the evaporator and to eliminate the vapor given up by the cooling water when it is evaporated.

The overall end function, that of dissipating the heat from the building to be cooled, is accomplished through the previously mentioned equipment by transferring the heat into the condenser cooling water. This water is taken from city mains or more commonly and economically furnished by the use of cooling towers located outside the building. For the library building a 400 ton steam jet refrigerating unit located in the central heating plant is used. Also located in the plant is a similar 200 ton machine which has been in operation since the union was built in 1938.

This type of cooling equipment was selected because the university has its own modern steam plant which generates its own electricity. The turbines used are of the bleeder type, bleeding at a pressure of 30 pounds a square inch. During the heating cycle this 30 pound pressure steam is used in the heating mains; for the summer cycle the steam available from the bleeder is used in the steam jet machine to provide chilled water for the cooling system.

It is obvious that a much better heat balance from the plant can be obtained by using the bleeder steam for both winter and summer use. It is possible also for the operating personnel of the heating plant to operate the cooling equipment.

Another reason for selecting the foregoing type of equipment located in the central plant, which is on the edge of the campus, was the fact that the cooling water towers, too, could be located near the heating plant.

One disadvantage of locating the cooling equipment centrally is the distance from the plant to the buildings to be cooled. The library, for instance, is approximately a half mile from the plant. The cost of installation was minimized, however, owing to the fact that a tunnel system is provided for all heat mains and it was necessary to use this space only as a location for the chilled water mains. Considerable power is required, however, to circulate the chilled water through these mains.

At the University of Nebraska it is felt that the cost of completely air conditioning new buildings is justified. The efficiency of students and faculty alike is greatly improved by the improved living conditions.

KNOW WHAT'S IN THE PAINT YOU BUY

FREDERICK L. BROWNE

Chemist in Charge of Painting and Finishing Wood
Forest Products Laboratory, Forest Service
U. S. Department of Agriculture

TO THE PURCHASING AGENT WHO sincerely tries to buy products of high quality on a strictly competitive basis, paint presents a baffling problem. There may be scores of trade brand paints represented to him as of the best quality and among these there may be a considerable range in price. Yet there are no recognized commercial standards by means of which he can verify the quality of the various offerings.

To add to the complications, paints may all be of high quality and yet of a number of different kinds even though made for the same use. House paints, for example, may be well made according to any one of a number of different groups and types. They differ materially in properties, yet no one of them is superior to all others. Each has some advantages and some disadvantages as compared with the others. When paint is bought by brand alone the purchaser has no convenient means of exercising choice in his selection of the kind best suited to his purposes and his ideas of satisfactory paint performance.

SPECIFICATION BUYING RESENTED

Purchasers of paint in large quantities often buy their paints according to prescribed specifications. Agencies of the federal government, for example, use the specifications of the Federal Specifications Board. Effective purchasing under specifications, however, has serious limitations. Orders must be made up far enough in advance and must be large enough to interest manufacturers in making special lots apart from their regular production. There must be provision for sampling and testing shipments for conformity by a qualified laboratory responsible to the purchaser. Ordinarily, the specifications themselves should be those of the Federal Specifications Board because the preparation of adequate paint specifications requires experienced technical competence. Most paint manufacturers resent specifications purchasing because they consider it a reflection upon the adequacy of the trade brand paints which, in fact, it is.

Users' need for more knowledge about paint than is provided by the trade brand was appreciated as long ago as 1905 when the state of North Dakota required by law that most proprietary paints bear a statement of the formula on the label. A large majority of the paints sold at retail now have such printed formulas whether or not required by law. Such formulas, however, are expressed in terms originally designed by chemical analysts to suit their convenience in analyzing paints; the customary formulas confuse rather than inform most paint puyers. Even technologists must recalculate them to gain their full meaning.

PROPOSED SYSTEM OF CLASSIFICATION

The Forest Products Laboratory, with the approval of the United States Department of Agriculture, has proposed a system of classification for house paints under which the important advantages of the trade brand method of purchasing are retained but enough information for users' guidance is given about the kind and quality of the paint in terms that can be made readily understandable.

This classification is based upon concepts that have long been familiar to most paint users and are to be found in nearly any discussion of paint composition intended either for laymen or for technical men. The concepts are merely rendered precise and quantitative by defining certain terms and symbols to represent them and by prescribing rules governing the classification adopted.

SEVEN GROUPS NAMED

House paints are classified by *group, type* and *grade.*

The principal ingredients of the paint determine its group. Nearly everyone is familiar with the fact that there are white lead paint, lead and zinc paints, titanium-lead-zinc paints and paints made with zinc sulfide, white lead and zinc oxide. By way of convenient abbreviation, white lead is represented by the letter *L,* zinc oxide by *Z,* titanium dioxide by *T* and zinc sulfide by S. White paints made with

TABLE 1—CHIEF PAINT TYPES

Symbol for Paint Type	Sum of *L* + *Z* in Per Cent by Volume of Total Pigment	Ratio of *L*/*Z* by Volume
1A	80 or more	more than 3/1
1B	80 or more	between 3/1 and 1/1
2B	between 60 and 80	between 3/1 and 1/1
3B	between 40 and 60	between 3/1 and 1/1
3C	between 40 and 60	between 1/1 and 1/3
4A	between 20 and 40	more than 3/1
4B	between 20 and 40	between 3/1 and 1/1
4C	between 20 and 40	between 1/1 and 1/3
4D	between 20 and 40	less than 1/3
5	less than 20	any ratio

ordinary linseed oil as a rule belong to one of the groups according to the nature of the principal pigments:

Group L: white lead
Group LZ: white lead and zinc oxide
Group TLZ: titanium dioxide, white lead, zinc oxide
Group TL: titanium dioxide and white lead
Group TZ: titanium dioxide and zinc oxide
Group SLZ: zinc sulfide, white lead, zinc oxide
Group SZ: zinc sulfide and zinc oxide

Tinted paints, which include most colors except the darkest ones, fall into the group determined by the white pigments they contain because the proportion of colored pigments needed for color is too small to affect other properties of the paint materially. The wartime and present oil restricted paints call for additional identification because the bodied or thickened linseed oil that they contain gives them some measure of the working properties of enamel. They were formerly called enamelized paints.

Such characteristic is indicated by *(e)* added to the group symbol. Thus paint of group *TLZ(e)* is titanium-lead-zinc paint made with an oil restricted or enamelized vehicle.

Paints of dark colors in which there can be little or no white pigment require additional symbols for important colored pigments as follows: *F* for iron oxide red, yellow or brown; *L* for red lead, lead chromate or blue lead, and *C* for other colored pigments such as carbon, ferric ferrocyanide (Prussian blue) or ultramarine.

Often the vehicle for such paints contains a substantial proportion of varnish, which is essentially resin and bodied oil; varnish is indicated by the symbol *(re)*. Thus a dark green trim paint made with lead chromate, Prussian blue (together called chrome green) and a vehicle of varnish or oil and varnish falls in group *CL(re)*.

PROPORTIONS NOT FIXED

In linseed oil paints, though not necessarily in enamels and interior paints, the proportions of white lead (or other lead pigments) and zinc oxide govern a number of important properties of paint. Much is said about it wherever paint composition is discussed but the reader soon learns that there are differences of opinion about what proportions are best. The classification system, however, is not concerned about what are the best proportions; it is concerned merely with making the proportions known closely enough to permit the buyer to exercise choice after he has decided whose opinion he wishes to accept.

TABLE 2—SUGGESTED STATEMENT OF CLASSIFICATION OF A PAINT

(As it might appear on label)

(The manufacturer's trade brand)

House Paint
White

Group TLZ *Type 3B* *Grade 1*

as classified according to the recommendations of
U. S. Department of Agriculture

The paint type indicates the proportion of lead pigment and zinc oxide. Account is taken of the sum of the lead pigment and zinc oxide, $L + Z$, and of the ratio of L/Z. The sum is calculated in per cent of the total pigment by volume and the ratio is by volume, not by weight. The chief paint types are shown in table 1.

SIX GRADES NAMED

The final item in the classification is grade. For house paints the grade depends upon the volume of opaque pigments (pigments that hide the underlying surface), the volume of total pigment (including pigments of low opacity, also called "extenders") and the volume of total nonvolatile (all ingredients that remain when the coating of paint dries) in the paint when it has been mixed for application according to the directions of the manufacturer.

Tables for the six grades of house paints, house paint primers, enamelized paints and enamels are published in Technical Bulletin No. 804, "Classification of House and Barn Paints as Recommended by the United States Department of Agriculture," obtainable from the Superintendent of Documents, Washington, D. C., for the sum of 10 cents.

Paint of *grade 1*, for example, is of sufficiently high quality for use in two coat painting of new wood or for one coat repainting where the old paint is in reasonably satisfactory condition. Many paints sold as "best quality" rank no higher than *grade 3;* they may still be capable of giving good service but three coats are needed on new wood and two in repainting. Paints of grade lower than *3* are deficient in hiding power, must be applied in extra thick coats or are otherwise inferior.

The classification system would serve best if responsible paint manufacturers voluntarily printed the classification symbols on the labels and joined in making their meaning known to the public along with their trade brands. A typical statement of the classification of a paint as it might appear on the label is shown in table 2.

The classification system can be used at any time, however, by purchasing agents willing to calculate the classification from the formula printed on the label as directed in Technical Bulletin No. 804. The bulletin shows in detail the steps by which the printed formula in percentages by weight is converted to the far more significant formula by volume, how to deal with ambiguous terms that sometimes appear in label formulas and how to determine the classification from the formula by volume. There is, in fact, no reason why paint manufacturers seeking the purchasing agent's orders should not submit a statement of the classification of the paint when asked to do so.

DOES NOT RESTRICT FORMULAS

Unlike specification purchasing, classification imposes no restrictions on the manufacturers' formulations. Any paint made can be classified. Classification does show which of the brands of paint on the market are similar in kind and comparable in quality. It makes it possible to buy intelligently on a competitive basis from the trade brand paints immediately available in manufacturers' or dealers' stocks. Classification, of course, does not attempt to rate the paint manufacturer's skill in production, his financial responsibility or his reputation for reliable business dealings. His trade brands remains his seal of responsibility in such matters.

IDAHO PLANS FOR COMFORTABLE

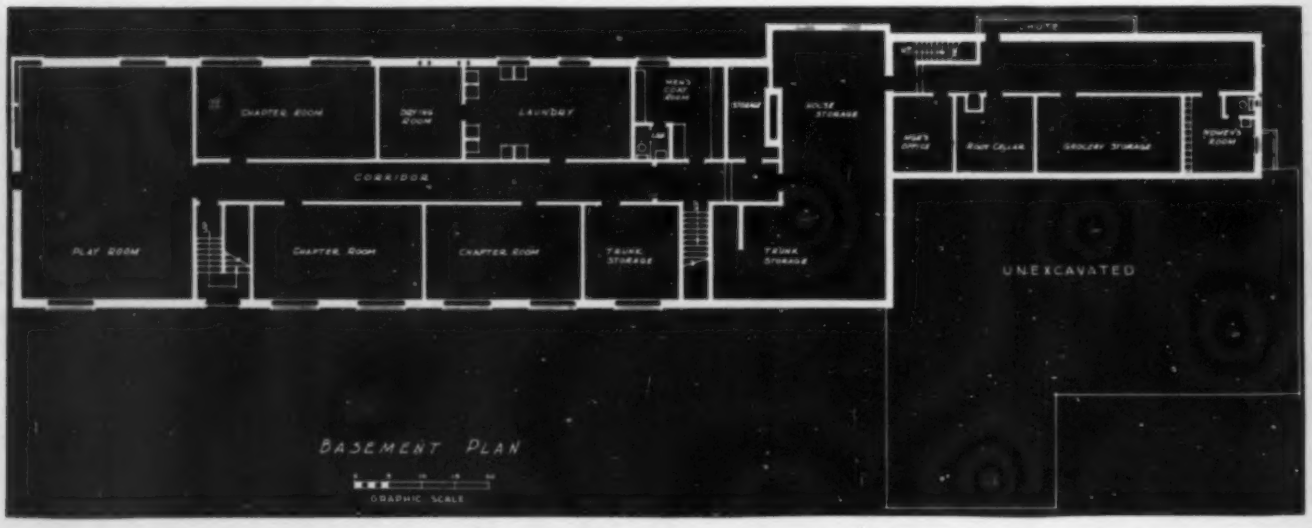
A DORMITORY BUILDING TO PROVIDE housing for 85 women and a dining hall for 300 students is included in the immediate building program of the College of Idaho at Caldwell.

In addition to the dining hall, kitchen and food storage, the completed structure will provide eight triple rooms, 14 by 16 feet; 27 double rooms, 14 by 12 feet; seven single rooms, 14 by 8 feet; a study lounge, 14 by 14 feet, with a Pullman kitchen on each of the three floors; a living room, 15 by 27 feet; a matron's suite, and a full basement.

In the basement will be three large chapter rooms; a large meeting room for games, socials and the like; extensive storage and laundry space, and a men's washroom. Adequate bathroom, shower and water closets will be provided on each floor, according to present standards.

The building will be of solid brick outside walls and inclusion of a sprinkler system for fire protection is planned.

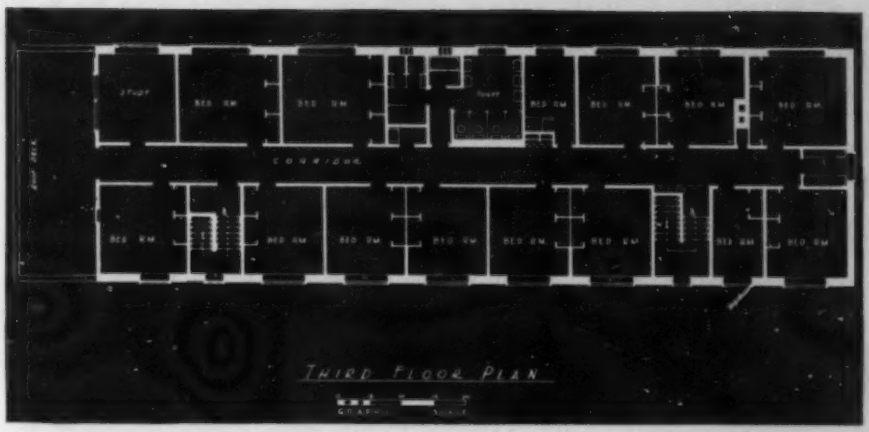
Architects for the building are Victor N. Jones and Associates, Boise, Ida., and Seattle, Wash.



BASEMENT called for in these plans is designed for use, and not just by trunks. Groups will not have to compete for "the room" as a place to meet; provision of three chapter rooms eliminates this potential problem.

LIVING

THURLOW BRYANT
Business Manager
College of Idaho



ROOF DECK will mean many happy hours of relaxation for residents of Idaho's new dormitory. The deck is accessible from the third floor.

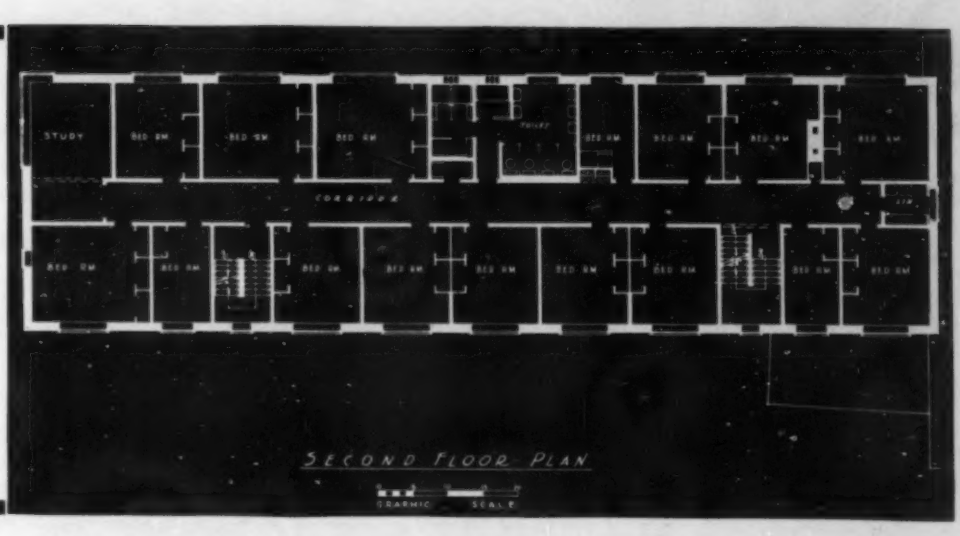
CONSTRUCTION DETAILS

GENERAL DATA:
85 women.

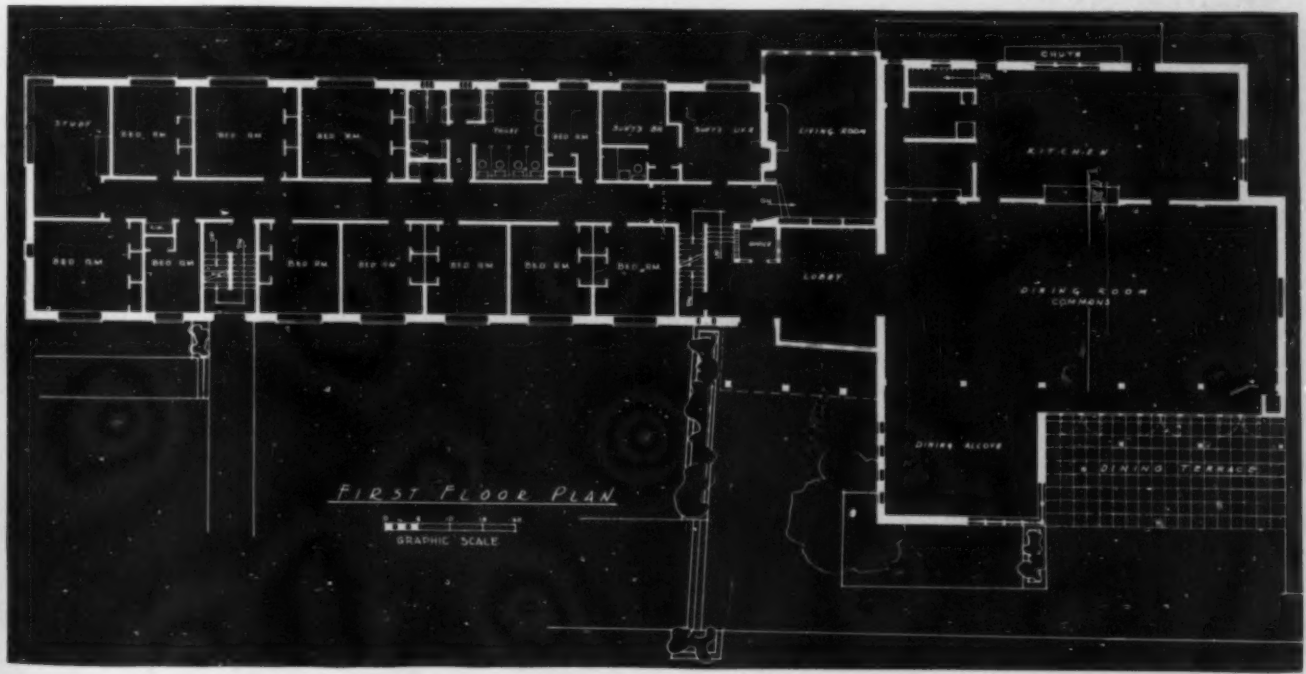
CONSTRUCTION:
Partially fireproof.

HEATING:
Low pressure steam.

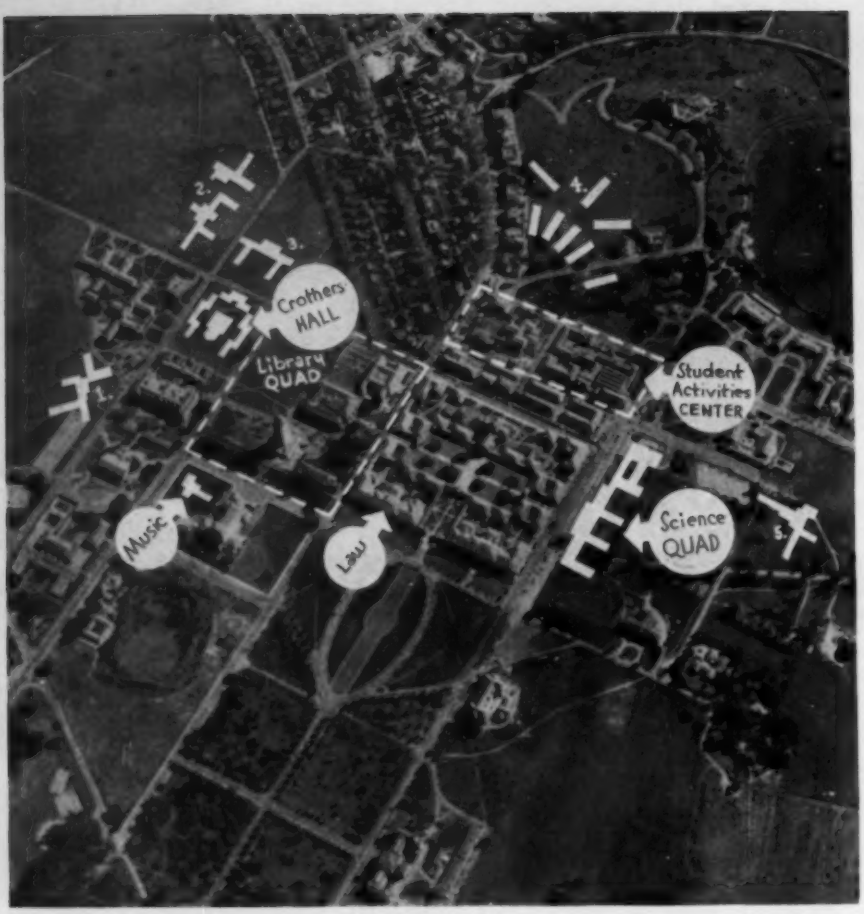
CALL SYSTEM:
Signal system to each room.



STUDY LOUNGE and Pullman kitchen are features not only of this floor but of all three. Planning shows thoughtful consideration for student habit of "snacking."



DINING TERRACE is the outstanding feature of the first floor plan. Arranged as a unit at one end of the building, kitchen and dining facilities are easily accessible to the 300 students for whom they were planned.



STANFORD LOOKS WHERE IT'S GROWING

FREDERIC O. GLOVER
Director of Information
Stanford University

UNDER A PLANNING SECTION NOW in its second year of operations and headed by Architect Eldridge T. Spencer, Stanford University is making sure that a logical course for its future growth is charted.

Some of the paper outlines of contemplated buildings and roads that dot the accompanying aerial photograph of the campus may never materialize but, if they do, their place in the university growth pattern will have been thought out so that their location will be proper functionally and so that water mains, power facilities and other utilities will be ready.

Flexibility to meet changing needs is the planners' byword. But in the two years that Mr. Spencer and other experts, including Prof. Lewis Mumford, have been at work on the university's long range planning, these basic concepts have been developed:

1. The inner quadrangle, a rectangle of one story buildings of the California Mission type of architecture that open onto arcades and are the oldest section of the university, must continue to be the heart of the institution, its academic and administrative center.

2. The interiors of the inner and outer quad buildings, the latter constructed around the inner quad and in the same Mission type of architecture but with buildings of two or three stories, should be rehabilitated and used primarily as offices and classrooms. Better heating, better lighting (below par at present because of the arcades lining the quadrangles) and some changes in partitions will adapt them for this purpose.

3. Two new quadrangles are contemplated eventually: one to the east of the present quadrangle and incorporating in it the main library building, the Hoover Library for War, Revolution and Peace and the education building; and another quadrangle that would be devoted to science and would group together chemistry, engineering, physics, mineral sciences and premedicine. This location would allow these schools increased room for laboratories and research fields in which the facilities of the present quad are inadequate from space and structural points of view.

4. To keep the academic area free from the disturbance of automobile traffic, a new system of peripheral roads, forming an approximate rectangle around the academic center of the campus is proposed.

5. Stanford, by tradition a residential university, should provide adequate housing facilities on the campus for the major part of its students, faculty, staff and employes so that it can remain a self contained community.

Some features of this program are already under way. The president's office has been renovated and modernized as the first step in making the inner quad the heart of the university. Construction is to start soon to convert the present administration building into a law building. Temporary structures have been erected to take care of the administrative offices until new quarters are ready.

The residential halls will be made up of a number of "houses," each with its own dining hall served from one central kitchen. The planners are thinking in terms of from 30 to 100 students in each of these units. Too, multiple dwellings, including units for married students and younger faculty members, are contemplated.

Another major feature is the development of a student activities center. In this center would be grouped student administrative offices, conference rooms, recreational facilities, alumni quarters, eating facilities for those not living in residential halls, a bookstore, barber shop, drugstore and clothing store.

Generally, the thinking underlying the long range planning program has been to determine trends in the development of the university and its surroundings and to decide which trends are desirable.

From this starting point, the university can try to meet future needs by capitalizing on what has been proved successful in architecture and layout and by discarding what has proved inadequate.

SENSIBLE APPROACH TO THE VETERAN'S FUTURE

How N.Y.U. operates its new testing and advisement center

HOWARD R. NORRIS
Director of Information, New York University

VETERAN JACK SMITH HAD ALREADY enrolled in the university law school when he came to the New York University Testing and Advisement Center. He had worked as a draftsman before joining the air corps and, although he was sure he wanted to become a lawyer, he was apprehensive in regard to his ability to master legal training. He was advised, after several interviews and a series of tests, that his choice appeared perfectly sound and practical. When last heard from, Smith was firmly entrenched on the Dean's List.

BILL SWITCHES COURSES

Veteran Bill White's father headed a successful firm of accountants and business consultants. White had started a course in accounting when he was drafted. He had planned, quite sensibly, to step into his father's shoes. While in service he felt his interests changing. He enjoyed his contacts with fellow soldiers and found that they turned to him for leadership and counsel. When he resumed his course in accounting he found himself unhappy and began looking around for something involving human relations.

At the center, a curriculum was planned in personnel work and labor relations, with accounting and business law in secondary rôles. When Bill is graduated he will enter his father's business and take over an aspect of it which he will enjoy.

Veteran Bob Brown had no vocational preference when he came to the center. He wanted to enter college but doubted his ability to make the grade. Furthermore, he did not know what he wanted to do with his life. Tests revealed a superior intelligence and a wide variety of aptitudes. In conference with a counselor, he diffidently admitted an interest in drawing. His interest test showed high scores under the mechanical and artistic headings. His interview sheet showed a preference for physics and mathematics among his high school subjects. He had never considered drafting and architecture, in the belief that this field was above his capabilities. In fact, he was ideally fitted for it and is now applying himself happily and successfully to a course in this field.

MAJOR FUNCTIONS OF CENTER

The cases cited illustrate three of the major functions of the center in advising veteran students or potential students: (1) to confirm a veteran's ambitions and plans; (2) to change an objective to accommodate interests and abilities, taking advantage of service experience and civilian circumstances; (3) to discover an interest, describe it in realistic terms and relate the veteran's aptitudes to it.

How are these functions carried out? On the basis of its experience with more than 10,000 veterans, of whom some 4000 are students at New York University, a simple and effective procedure has been worked out. There has been a proportion of trial and revision in developing the best process and there is adequate room for flexibility within the broad outlines. This is essential, since the center is dealing with individuals and their individual problems, and rigidity must be avoided.

At New York University Center, a constant effort is made to simplify preliminary steps. To this end, Veterans Administration offices have been located on the same floor as the center which handles veteran cases for the V.A. To establish with the V.A. his eligibility for testing and advisement, a veteran may walk in and fulfill any one of the following requirements: show his certificate of eligibility; show his discharge papers and bursar's receipt; show his discharge papers and acknowledgment of receipt of form 1950 (V.A. authorization for services); surrender a photostatic copy of discharge papers and file for form 1950; show discharge papers and notice of subsistence award. When a veteran can satisfy none of these requirements, he can file for his form 1950, start his advisement process and bring the necessary papers on his second visit to the center.

ACTUAL PROCEDURE FOLLOWED

Having established his eligibility, finally or tentatively, the veteran starts the actual center procedure. The first step is an interview, usually requiring about an hour and a half, to discover basic data. This interview, administered by special employes, graduates in

psychology, investigates the veteran's personal history, education, vocational experience, service experience, interests and ambitions.

The interviewers are trained to pick up trends and tendencies in the interview data, to note strong points, weaknesses and characteristics that will affect the choice of a satisfactory vocational goal. These are indicated on the interview sheet for the consideration of the testing room and counselor. On the basis of the general interview data and of the interviewer's observations of the client, the interviewer suggests certain testing areas and the veteran proceeds to the testing department.

BASIC TESTS COME FIRST

In practically all cases, the veteran receives a basic battery of tests which measure general intelligence, mechanical aptitude, clerical aptitude and spatial visualization ability. The testing supervisor then administers other tests, as indicated by the interviewer and by his own consideration of the interview data. These tests are chosen to fit the individual needs of each veteran and vary widely according to his background and ambitions.

All standardized tests are available, although the written, structured tests are used for the most part. Manipulative tests to determine dexterity and muscular coordination, as well as form perception, are also used extensively. In some cases, clinical tests of the performance and projective type are also employed. In general, the center employs as many or as few tests as seem necessary to obtain a sound, complete basis for counseling.

When the veteran's folder reaches the counselor, he is able, with a small amount of study, to derive from interview data and test profile a fairly complete picture of the veteran's capacity, interests and aptitudes. If the counselor needs more information in these categories, or in the areas of educational achievement or personality adjustment, he can send the veteran back for more testing, specifying the tests he wishes administered.

The center counseling staff is composed of psychologists and experienced vocational guidance workers with considerable training in psychology. When a staff counselor meets with the veteran, he has extensive knowledge of the man he is interviewing plus extensive knowledge and experience in the vocational and educational planning field to aid him.

In practically all cases, the counselor explains the test results to the veteran, showing him his relative standing among the population at large, among the veteran population and, in some instances, among apprentices working in the fields in which the veteran has expressed interest.

An attempt is then made to work out a program which takes best advantage of the veteran's background and experience, aptitudes, interests and motivations. Current conditions in various job and professional fields, such as overcrowding, wage scales and possible future trends, are considered. Educational opportunities and curriculums are surveyed in relation to the benefits to which the veteran is entitled. The personal circumstances of the veteran weigh heavily, whether he is married and has children or single and without responsibilities.

No attempt is made to shove the veteran into a program. Rather, veteran and counselor seek cooperatively to work out an intelligent solution, using the data at their disposal plus the counselor's knowledge of the educational and job fields and his experience and technics in formulating satisfactory vocational programs.

REALISTIC GOAL SOUGHT

A basic factor in this procedure is motivation. It has been found most unwise to oppose a veteran's motivation on the basis of test scores or other data unless it is ridiculously unrealistic. If he is not equipped to realize his vocational ambition, an associated field is sought. If his ambition is not feasible because of bread and butter considerations, he may be directed into a field where he can achieve work-happiness and his ultimate goal can be pursued as an extracurricular activity or hobby, with the chance that it might eventually be converted from avocation to vocation.

In general, a specific, definite, realistic goal is sought; the veteran's interests and motivations are satisfied as far as possible; his capacities and aptitudes exploited; his V.A. benefits best utilized, and the necessities of the economic circumstances satisfied. Definite educational programs are worked out with a vocational aim in view and, in many cases, education and training are combined with a job.

When the veteran has completed his counseling, which may require from one to three conferences and involve a total time expenditure of from six to fifteen hours, his folder is returned to the V.A. and the machinery is set in motion to make available all the benefits for which he is eligible. These vary according to the veteran's individual status, able or disabled, extent of disability or extent of service.

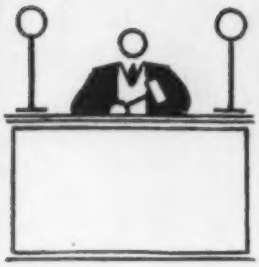
NOT AN EMPLOYMENT AGENCY

The center is careful to clear up various misconceptions that arise about its work. It is not the only veteran counseling agency in the university but works in cooperation with the academic counseling offices of the various departments. The center is not an employment agency; it does not place veterans in jobs. The center does not attempt any cures, attempts no therapy or psychiatry; veterans requiring therapy are referred back to the V.A. for treatment.

Any tendency to view the tests as magic or as crystal balls is conscientiously exploded. The tests provide simply one quick, effective method of deriving information useful for educational and vocational counseling; they are always combined with a thorough interview and at least one lengthy conference. The entire center procedure is a common sense method of accomplishing a job, using all scientific technics that have proved helpful. A scoring machine is employed to handle the load of written tests and to ensure accuracy.

There are now more than 50 full time employes at the center in addition to the V.A. office staff on the same floor. Private clients are handled, as well as veterans, in the fields of vocational and educational counseling, child advisement, personality evaluation and employer counsel. Private clients pay a fee of $30 to cover the cost of the counseling service. Veterans are offered the service without charge.

The center's best proof of a job competently done is the fact that about one out of every 12 or 15 veterans who come for testing and advisement is sent by a friend who is pleased with the help he received there.



TRUSTEES' AUTHORITY TO INVEST TRUST FUNDS

M. M. CHAMBERS
American Council on Education

IN EARLIER ARTICLES IN THIS SERIES we have occasionally noticed something of the varied and important rôles played by charitable trust funds in higher education. For example, it was noted that when real property was devised to a nonprofit educational institution with the stipulation that it be not sold except upon permission of a designated court, the will created an active special trust which must be operated in accord with its terms.[1] However, when an application is made to the court having jurisdiction, for permission to sell trust property upon a convincing showing that changing conditions over a considerable period of time have made the sale necessary in order to continue the accomplishment of the donor's charitable intent in a practicable manner, the court may approve the application, as it did in the case of the real and personal property of the art school and museum operated for several years by the Louis Comfort Tiffany Foundation at Oyster Bay, N. Y.[2]

SUPERINTENDENCE BY COURTS OF EQUITY

The Tiffany case illustrates that although a broad jurisdiction resides in the courts of equity they exercise it generally with caution. Thus, while authorizing the trustees to sell the property, add the proceeds to the principal of the trust and use the income for the support of fellowships in the fine arts, the court reserved decision as to the trustees' request for permission to invest in securities other than those approved by statute for savings banks and trustees, to which the founder had apparently limited them in the trust instrument, and further specified that any and all specific new undertakings of the trust would be subject to the court's approval.

A section of the Personal Property Law of New York authorizes the courts to give appropriate instructions when trustees present facts tending to show that specific personal property must be sold for the good of the trust, but a court is under no compulsion to give long term blanket or general authority to sell and at least one court has refused to do so.

An unnamed charitable trust, created in 1911 under an instrument directing that $31,000 in West Shore Railroad 4 per cent bonds be held until matured (in the year 2015) or paid, asked the court "to permit it, at its discretion and without further direction from the court, at any time and from time to time, to sell and dispose of" the bonds. Finding that the bonds had always paid interest regularly and were currently selling at 84¼, the court curtly noted that "The construction sought would completely change the scheme apparent from the face of the trust deed," and "Giving the trustee the powers asked for would not amount to a construction but a destruction of the obvious intent of the settlor of the trust."[3]

EFFECT OF CHANGED CONDITIONS

During the last fifteen years, a great and apparently permanent decline in the general level of interest rates and the ups and downs of the cycle of deflation and inflation have both complicated the problems of trustees endeavoring to safeguard the value of trust property and obtain regular and dependable income therefrom. A recent case involved a trust in New Hampshire set up to provide incomes for named private beneficiaries for a period of forty years and thereafter to go to designated charitable remaindermen. The donor's words in the trust instrument were: "I direct it shall be invested in at least two good savings banks in New Hampshire."

The trustee bank asked for a decree to broaden its discretion as to investment, upon showing that the average savings bank interest rate had declined from 4.15 per cent in 1932, the year of the testator's death, to 1.99 per cent in 1945, thus cutting in half the income which he probably anticipated; and the supreme court of New Hampshire agreed that "This could be found to be a change in circumstances unforeseen by the testator that substantially impairs the accomplishment of the gift of the income."

Considering whether investment in common stocks should be here authorized, the court quoted from Scott on Trusts: "The question has arisen whether the trustee should be permitted to invest in common stocks, although by the terms of the trust or by statute these are not proper trust investments, on the ground that in the event of monetary inflation such stocks would presumably rise in value and would therefore be a hedge against inflation.

"In states in which the purchase of properly selected shares of stock is a legal trust investment and the terms of the trust do not forbid such purchase, there is no difficulty. In such a case the trustee is merely required to exercise a proper degree of prudence under the circumstances. Undoubtedly the danger of inflation is a circumstance which a trustee can and should take into account in determining whether and to what extent he should invest in the purchase of shares of stock."

[1] Lehigh University *v.* Hower, (Pa. Super.), 46 A. 2d 516 (1946).

[2] Application of Arms et al., in re Louis Comfort Tiffany Foundation, (N. Y. Sup.), 64 N. Y. S. 2d 693 (7946).

[3] Application of United States Trust Company of New York, in re Griffith et al., (N. Y. Sup.), 66 N. Y. S. 2d 72 (1946).

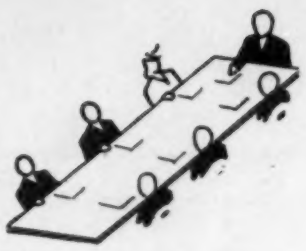
Resuming its own discourse, the court concluded: "Substantially lower interest rates should be carefully considered by a trustee and the court of equity as well as the factor of inflation. The one as well as the other results in loss that is an impairment of the gifts of a trust. It is true that (in this case) the lower dividends of the savings banks affect only the life tenants, but their rights must be protected as well as those of the remaindermen. This state permits trustees to invest in common stocks within limits and the will here does not forbid it although it directs depositing in savings banks."[4]

In support of its decision to authorize investment in common stocks the New Hampshire court cited somewhat similar recent decisions in New Jersey and Nebraska. A New Jersey statute empowered the court to permit a charitable trust, upon petition, to invest in common or preferred stocks of corporations having been organized and engaged in business at least five years. Basing its decision in part on this statute and in part on its own inherent equity jurisdiction, the New Jersey court issued a decree authorizing a community chest to invest up to one third of its endowment funds in specified types of common stocks, "in order not only to produce more income but also to safeguard the principal of the fund."[5]

In the Nebraska case it was shown that the interest yield on the book values of securities held by an institutional endowment fund had gradually and persistently declined from 10.19 per cent in 1916 to 2.55 per cent in 1940. The trust instrument, drawn up four decades earlier, authorized investment only in "interest bearing securities." Upon petition of the trust, the court broadened the field by authorizing the portfolio to consist of three parts: (1) interest bearing securities, meaning promissory debt obligations of governments, municipalities and public corporations, and notes, bonds or debentures of private corporations outstanding not less than three years without default or waiver of default; (2) selected preferred stocks on which dividends had been continuously earned and paid for at least five years, and (3) seasoned common stocks having earned and paid dividends regularly for at least ten years.

[4]Citizens' National Bank *v.* Morgan et al., (N. H.), 51 A. 2d 841 (1947).

[5]Morris Community Chest *v.* Wilentz, Attorney General, 124 N. J. Eq. 580, 3 A. 2d 808 (1939).



Said the court: "The primary object is to preserve the trust property so that it may be used to the greatest advantage of the beneficiaries. This property must produce an income. To do so it must be safely invested in productive property. The present base of investments is shown to be inadequate to the need"; and: "The conclusion is that an equity court may authorize the investment of trust funds in common and preferred stocks under conditions that safeguard the investment and an adequate income return consistent with that safety, in order that the primary purpose of the trust may be more effectively secured, although such investments were not authorized in the instrument creating the trust."[6]

PERSONAL RESPONSIBILITY OF TRUSTEES

With a warning that its application would necessarily depend upon the circumstances of each particular case, the Nebraska supreme court also approved a rule stated in the decree of the lower court: "Trustees . . . are hereby declared not to be, nor become, personally liable in the selection of investments . . . , nor in their depreciation, except upon the affirmative demonstration of fraud or negligence . . . , or the want of exercise of such reasonable care as prudent men would exercise in the selection of their own investments, made with a view of the preservation of the investment while realizing a reasonable return thereon."

It has long been recognized that a too strict rule regarding the personal liability of trustees would deter competent men experienced in financial affairs from accepting trusteeships and thus would carry possibilities of lowering the quality of the administration of trusts in general. Accordingly, during the course of decades, the courts of some states, led by an early Massachusetts decision, have generally adhered to the rule that a trustee is personally responsible merely for such degree of diligence and care as a prudent man would exercise in the management of his own funds.

[6]John A. Creighton Home for Poor Working Girls' Trust *v.* Waltman et al., 140 Neb. 3, 299 N. W. 261 (1941).

It is understood, of course, that the trustee is bound to observe the mandates of the trust instrument and of the institutional charter and personally liable for plain violations thereof, whether done willfully or through ignorance or carelessness, but he is not an insurer of the safety of the trust funds and not personally responsible for losses resulting from honest mistakes of judgment, such as might not have been avoided by an ordinarily prudent man. This is exemplified in a Missouri case.[7]

As to the exact degree of care the trustee must exercise in order to be immune from personal liability, there is a somewhat stricter line of judicial reasoning originating in an early New York decision which has been followed in Michigan, Wisconsin and some other states. As stated by the Michigan court: "A trustee has not unlimited authority to invest as an ordinarily prudent man would invest his own; he must take such risks only as an ordinarily prudent man would take who is a trustee of the money of others."[8]

The rule has been stated also by the Wisconsin court, declaring that the prudence required of a trustee "necessarily excludes all speculation, all investments for an uncertain and doubtful rise in the market, and, of course, everything that does not take into view the nature and object of the trust, and the consequences of a mistake in the selection of the investment to be made. It therefore does not follow that because prudent men may, and often do, conduct their own affairs with the hope of growing rich, and therein take the hazard of adventures which they deem hopeful, trustees may do the same; the preservation of the fund and the procurement of a just income therefrom are primary objects of the creation of the trust itself and are to be primarily regarded."[9]

The foregoing cases throw only a few sidelights and afford only a sketchy background upon which to view the problems of trustees and their investment officers. Other more specific questions have arisen from time to time and will continue to appear with changing conditions.

[7]Board of Trustees of Park College *v.* Attorney General, 228 Mo. 514, 129 S. W. 27 (1910).

[8]In re Buhl's Estate, 211 Mich. 124, 178 N. W. 651, 12 A.L.R. 569 (1920).

[9]In re Allis' Estate, 191 Wis. 23, 209 N. W. 945, 210 N. W. 418 (1926).

THE EYES HAVE IT IN FOOD

ELEANOR M. SNEDEKER

Directress of Dormitories and Dining Halls
Hobart and William Smith Colleges

THE WAY TO A MAN'S HEART MAY be through his stomach but the modern male of the species wants this route to take the form of attractive, eye appealing and balanced menus. Girls like their food that way, too.

We learned this lesson from our experience in feeding the men of the navy V-12 program who landed on the campus of Hobart and William Smith Colleges July 1, 1943, and remained, with various changes, until Oct. 31, 1945. Proof that we learned our lesson well is the fact that our wartime record shows that during the two and a half years we never had a boy ill as the result of food served or lack of proper diet.

We had our problems. The mess hall was set up in the dining hall of our college for women and there had to be a number of changes made between the time the girls left in May and July 1 when the navy arrived. Gone were the round tables, the pottery, the draperies at the windows and the soft lighting effect. In their place were the typical mess hall benches, bright lights and two cafeteria counters. Even the windows became "portholes" in our nautical environment.

Our orders were to feed 400 men in a room with seats for only half that number and to do it in fifty minutes. At first it seemed to us as if we would have to adopt the navy motto: "The impossible we do at once, the miraculous takes a little time."

Our counters were made ready with two complete setups and, after the first few days, we found that we could get one battalion through the line in six to eight minutes, clean up, reset, empty the mess hall and be ready for the next battalion in twenty to twenty-five minutes.

This meant fast service and extra effort to avoid the hazard of sloppy and unappetizing looking trays that speed sometimes brings. We used six compartment trays and our only dishes were soup bowls and cups for milk and coffee. Desserts were served in paper dishes or flat paper plates. Butter chips were used. This looked better and the men did not have to wait for these items to be served but just picked them up as they went through the line.

Our navy V-12 men wanted plenty to eat but they wanted good food. Salads were served both noon and night and were great favorites. Contrary to the rule on navy and army bases we served our lightest meal at noon and dinner at night. Anyone is likely to be groggy after a heavy meal and as our men had classes in the

EYE APPEAL has been emphasized in the 10 salads shown on this page and next. They are by Arnold Shircliffe, well known chef and restauranteur, Chicago.

afternoon and were not exercising, it was better to give them their light meal at noon.

It has long seemed to be the practice of institutions to have stereotyped menus: every Tuesday baked beans, every Wednesday frankfurters. That is not necessary. There are enough good American dishes so that menus need not be duplicated every week but can be duplicated every 10 or 12 days. We did not serve ice cream every Tuesday and Thursday night but had it whenever we thought it would make the menu more interesting.

THERE'S A LIMIT TO STARCH

It is easy in institutional feeding to have menus heavy with starchy items. That is why salads are important. Fruit is an important item for dessert when the meal is inclined to be heavy and starchy. If the meal is light, it is wise to serve bread or rice puddings or flavored puddings, such as chocolate or vanilla, dressed up with fruit, nuts or whipped cream. If fruit is used for salad, it should not be repeated for dessert.

Our navy men wanted attractive and eye appealing meals as well as the next person and it was just as easy to make the meals attractive using mess hall trays as it would have been with plate or table service. The counter girls were taught to put the food in the proper compartments and not to have one item of food running into another. Food was placed in the counter pan so that it looked enticing: a dash of paprika on mashed potatoes, chopped parsley on boiled potatoes or, if parsley was not available, celery leaves chopped fine. Parsley on meat trays and sliced egg on spinach always helped to make these items look more inviting and they were much more popular that way than served plain. Lemon or parsley on fish trays or a good tartare sauce served with fish helped to sell that unpopular item. Another entree that was not liked was liver but we tried to serve it at least twice a month. If liver was dressed up with bacon or served with plenty of onions it proved to be an acceptable main dish.

Another lesson we learned in menu planning was that if the main dish was at all weak or unpopular we should dress up the rest of the menu with an attractive salad and an extra special dessert. This satisfied the men and we had little griping.

Soup was served both noon and night. Often in extremely warm weather the men would take only the soup, a salad and dessert and would feel that they had had sufficient to eat. The navy men were allowed to have all the milk they wanted and it was served at every meal. Coffee was served at breakfast and dinner only. Iced tea or fruit punch was a welcome and popular item in warm weather.

Weight records were kept of "our boys" and they all gained or maintained their average weight during their stay with us. We believe this was because we tried to keep our meals well balanced and not heavy with starchy items. For instance, potatoes were never served when spaghetti, macaroni or rice was the main dish; with it an additional green vegetable was included.

Holidays meant little or nothing in the lives of the navy V-12 men. Classes, drills and exercises went on just the same as any other day but we tried to recognize the holiday by putting something on the menu typical of the day. Needless to say, we always received plenty of comments and compliments on this little extra service.

In September of 1945 the girls of William Smith College took back their buildings and for three months they ate the same food and received the same service as the men. We received surprisingly few complaints. In fact, the girls seemed to enjoy the navy way of eating. The navy left our campus the last of October and we served the girls cafeteria style until the Christmas vacation when our maintenance men were able to find time to convert the dining room back to its formal, peacetime atmosphere.

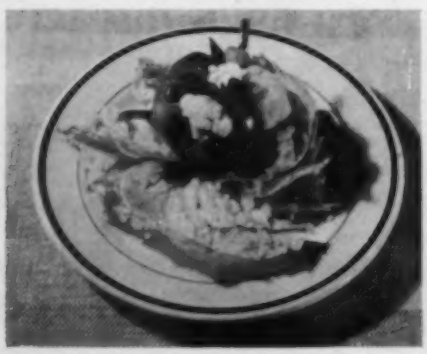
During this interim period a family type of service was used but our rules still held fast to attractive, eye appealing and balanced menus. We were amazed, however, at the food that was left over.

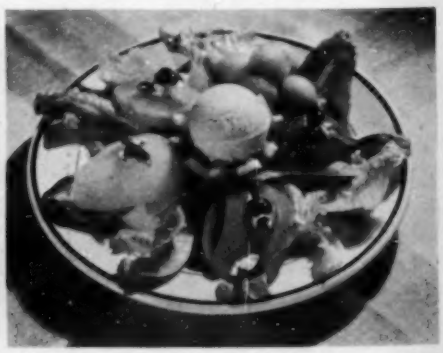
PLATE STYLE TEMPTS

This year, because of the increased number of girls using the dining room, we have changed our service to plate style. The food is plated in the kitchen and we try to make our portions an adequate serving with the understanding that "seconds" can be had when wanted. We have discovered that the girls will eat what is set before them. They will try the vegetables that are on their plates where in the family type of service many times they passed up a dish they thought they did not like. Now that it is on their plates and in front of them, they taste it and many times find they really enjoy it. Thus they are eating a better variety of food. Salads are served in big bowls, on platters or made individually, depending upon the type of salad.

These are the things we have learned from our wartime feeding experience. Food must be well cooked and seasoned, and meals must be balanced, eye appealing and attractive so that the student is tempted to try a dish because it "looks good." Simple dishes and plain everyday foods are the best to serve. No matter how many are eating, meals can be planned and cooked so that everyone enjoys them. We still follow no set rule for type of meals and many times the remark is made:

"We like to come to meals because we never know what we are going to have. You never repeat from week to week."





QUESTIONS AND ANSWERS

Fireproofing Buildings

Question: Could you suggest an inexpensive way of fireproofing buildings which were not built originally of fireproof materials?—B.F., Mich.

ANSWER: The use of the word "fireproof" in the question suggests that the reader is unfamiliar with the fact that there are few so-called "fireproof" buildings even though they may be built of fire resistive materials. This is owing to the fact that buildings of superior fire resistive construction are oftentime filled with combustible furnishings or materials which, when ignited, could cause loss of life and severe damage to the structure. We know of no inexpensive method of substituting fire resistive structural materials for combustible materials. There are, however, many ways known to fire prevention and protection engineers to compensate for the hazards of inherent combustibility of structures.

It is obvious that the best answer to the question would be something like this: "You wouldn't go to a veterinary for appendicitis; therefore, find the best qualified fire prevention and protection engineer you can, let him study the problem and then follow his advice."

In order of relative effectiveness combustible buildings may be protected by any of the following types of equipment or safeguards:

1. A standard automatic sprinkler system installed throughout the structure in accordance with the standards recommended by the National Fire Protection Association and with the rules and regulations of public or insurance inspection authorities having jurisdiction. It is also important to the owner that the sprinkler system is automatically supervised to ensure its operation at all times.

2. Automatic fire detection and alarm equipment can be successfully used to compensate for structural deficiencies if the structure and occupancy are not so inherently hazardous that fire fighting forces cannot reach the structure in sufficient time, however short it may be, to extinguish the fire in its incipent stage before it endangers life and property.

3. In the absence of automatic sprinkler protection or fire alarm protection, combustible structures can be additionally safeguarded by structural changes designed to reduce the amount of the combustible material subject to loss from a fire of single origin.

For example, enclosure walls should be placed around open stairways thus providing increased life safety and a better chance for fire departments to confine a fire to its floor of origin. Other examples are enclosing boiler or furnace rooms with masonry walls, providing fire door protection at openings in the furnace room walls and using metal lath and cement plaster ceilings for the protection of wood joists.

4. Many hazardous locations, such as janitors' closets and trash rooms, in structures of superior fire resistive construction can be and should be safeguarded with automatic sprinkler protection, with the water supply taken from the domestic water service.—JAMES MCELROY, *engineer, National Fire Protection Association.*

Concrete v. Asphalt Walks

Question: In paving campus walks, what are comparative costs of concrete and asphalt? Which is more desirable from the maintenance point of view?—E.R., Mich.

ANSWER: The cost of 5 inch concrete sidewalks and asphalt walks with gravel as a base and with wooden side forms left in place is approximately 21 cents a square foot for the concrete and 17 cents a square foot for the asphalt. These figures exclude the cost of preparing the grade in each case (also profit).

Although this estimate is based on wooden forms left in place, for the asphalt walk it is considered advisable from the standpoint of permanency to use a concrete curb. If concrete curbs are used for the asphalt walk, the cost per square foot becomes even greater than that for concrete.

In this climate the concrete walks have been found to require much less maintenance than do those built of asphalt.—A. F. GALLISTEL, *superintendent of buildings and grounds, University of Wisconsin.*

Speeding Up Cafeteria Line

Question: Please suggest ways of speeding up a cafeteria line.—J.K.R., Ohio.

ANSWER: Many factors affect the speed of the cafeteria line and some of the ways to increase it follow:

1. Limitation of choice in the menu.

2. The training of employes in methods of serving, size or portions, and in assisting customers in selection. We find that our guests will stand and look at the menu board until questioned—graciously we hope—by the person serving the entrees as to whether they would like such and such an item.

3. Convenient arrangement of dishes and serving equipment.

4. Prompt delivery of food to counter so that no holdup in the line results from failure to have food available.

5. Posting of menus at several points along the line. Many persons find that the placing of a card showing the price of each item at the end of the container facing the customer speeds the choice. We have never been able to arrange this mechanically so I cannot speak from experience.

6. Good placing of items on the counter for the speed of service. For example, relishes and sauces to be served with a particular item should be placed by it. We also place in the same pan items which are to be served together so that the server serves from one pan without moving to another. We also happen to have in the steam table one or two openings that we now use for spares of the items we know are most popular.

7. The service of combination meals greatly speeds the line. In the summer we use one line for combination cold plates of one sort or another, such as sandwiches, salad and soup. The other line is used for those who wish to select hot food as a main dish. In the winter we do a similar type of thing in the Horace Mann Cafeteria where we serve table d'hôte lunches only, offering a choice of three or four at a set price.—MARY DEGARMO BRYAN, *head of institution management, Teachers College, Columbia University.*

NEWS

Report Quarterly Now on Veterans' Occupancy . . . Approval Revoked on 80,000 Training Establishments . . . Construction Controls Removed . . . May Delay U.M.T. Decision . . . Dates for Veterans' Education Soon Fixed

Occupancy Reports to Be Submitted on Quarterly Basis

Commissioner Dillon S. Myer in June issued two transmittals (Nos. 16 and 17) for revision of the F.P.H.A. Housing Handbook of Information.

Effective for the quarter ending Sept. 30, 1947, submittal of occupancy reports from colleges and instrumentalities for Veterans' Housing Projects under Title V (as amended) of the Lanham Act will be on a quarterly basis. At the present time, reporting of occupancy is required on a monthly basis. New forms are being submitted to the institutions for use at the end of the July-September quarter.

It is suggested that either the Application File or the Space Inventory File can continue to be used provided it shows the applications on file not yet accepted or not yet moved in, those moved in during the current quarter, the persons in the project moved in prior to the current quarter, those moved out during the quarter and the race and status of the veteran.

When family dwelling units at universities or colleges are used temporarily as dormitory units, the unit of count shall remain the unit as constructed. Such units shall be accounted for on the report for family accommodations but with a footnote showing the number of occupied units being used for dormitory accommodations.

Transmittal No. 17 revises the instructions for accounting and financial reporting. The purpose of the revision is to give greater freedom to educational institutions and local governments "in determining the accounting system they wish to maintain and to outline the minimum accounting requirements which are prescribed." The simplified Form F.P.H.A.-621 Wx has been redesigned and will permit local bodies whose contracts permit reimbursement of development costs from project income or maintenance of a reserve to submit their reconciliation.

Controls Removed From Construction

The Office of Housing Expediter has issued Supplement 5 to VHP-1, removing from control almost all types of construction.

The order specifically eliminates the necessity of procuring prior approval for the construction of housing units or dormitories by educational institutions and "living facilities, such as dining halls built and to be used exclusively in connection with a new dormitory, and subsidiary buildings for trailer camps, such as laundry rooms, toilet facilities and the like, when they are built by a public institution."

Issue Regulations on Leave to Veterans

The Veterans Administration has issued a statement (TB 7-39) giving the policy to be followed regarding authorization of leave to veterans who interrupt their course of education and training.

Public Law 346 specifically authorizes V.A. to pay subsistence allowance to veterans "including regular holidays and leave not exceeding thirty days in a calendar year." Similar leave not to exceed thirty days in any consecutive twelve months is allowed under Public Law 16 but the latter contains the further provision that "during leave of absence such person shall be considered to be pursuing his course of vocational rehabilitation."

May Sidetrack U.M.T. Bill for This Session

HELEN C. BROWN
Washington Correspondent

The President's Commission on Universal Training, after nearly six months of investigation, presented its report on June 1 urging universal military training but stating that "a strong, physically healthy, economically prosperous, well educated and united population is our No. 1 requirement."

Seven other essentials of the national security program were described by the commission.

In its discussion of universal military training, the commission stated: "It is perfectly apparent that the overall cost of an adequate program is staggering. We have no desire to sugarcoat this fact. The question we face as a nation is how much we are willing to pay for the avoidance of the incalculable horrors and cost of another war. To do less than enough is to gamble with our lives and our liberties. We feel strongly that the United States must have universal training but we are equally firm in our conviction that other elements of national security should not be sacrificed or starved to pay the bill."

The program of training outlined by the commission is that proposed earlier by the army with several minor differences. It calls for a year of military training or its equivalent. A continuous six months' period of military training is required of all males followed by one of several alternatives: continuous in training for the balance of the year; enlistment in the regular army or navy; volunteering for R.O.T.C. or National Guard, or enrolling in school or college courses ap-

proved by the service branches as of special value to national security.

Inductions will take place on May 1 and November 1 for all males, mentally and physically fit, who have reached the age of 18, or upon graduation from high school, which ever date is later.

The program, as recommended, would be under the direction of a three man commission, only one of whom can be in the armed forces. The need for special civilian advisory groups in the operation of each military establishment is also emphasized in the report.

Hearings have been held by the House armed services committee on proposed legislation providing for universal military training. But according to a member of this committee, the all-out drive to cash G.I. terminal leave bonds will probably sidetrack action on military training during this session of the Congress.

Congressman Arends of Illinois, House Republican whip and a member of the committee, said he believed Congressmen should have an opportunity to discuss plans for military training with their constituents during the summer months.

Army to Organize Minutemen Aids

The War Department recently launched a drive to organize 2500 specialized reserve units throughout the United States.

Secretary of War Patterson and General Eisenhower outlined to topflight educators and labor and industrial leaders the War Department's plan. It calls for the immediate organization of teams of persons in the same institution, industry or agency to act as a unit in event of another war. Each team will specialize in an activity which is related to its employment but which parallels a similar need during war. In educational institutions the units might be in a field of research in mass media or an instructional unit to be moved as a group to teach specialized skills.

Similar medical and nursing units were organized during World War II, but the plan is to extend into as many fields as possible. Persons who enlist will be in the Organized Reserve and subject to call in event the Congress declares a national emergency.

F.W.A. Reports on Temporary Facilities

The latest report (June 13) of the Federal Works Agency and the U. S. Office of Education indicates that a total of 1618 applications had been received for temporary educational facilities other than for housing and for equipment.

Of this total, 1107 requests had been made for facilities totaling 33,000,000 square feet of floor space and 511 were for equipment only. The U. S. Office of Education had issued a finding of need for 1554 of the applications totaling 20,500,000 square feet.

A total of $83,000,000 has been made available to provide equipment and temporary educational facilities to colleges and universities in which veterans are enrolled. Of the $77,000,000 available above administrative expenses in the original appropriation, $74,036,828 has been allotted and recommendations for allotment of $1,025,153 have been made. This leaves a balance of $1,938,019 in this fund.

Only $11,300 of the $3,000,000 appropriated in June 1947 has been allotted. The appropriation act specifically limits the contribution of F.W.A. in the expenditure of this $3,000,000 to $3 a square foot. Instead of calculating what proportion of each installation could be paid by the $3, F.W.A. has agreed to transport temporary structures to the campus; the institution must bear the full cost of re-erection.

Would Extend G.I. Bill to Children of Deceased

The extension of educational benefits to children of deceased veterans is proposed in two bills, H.R. 3691 and H.R. 3710, recently introduced.

The bills differ somewhat in the extent of the coverage, but both would make it possible for the children of any person who lost his life while in active service between Sept. 16, 1940, and Jan. 1, 1948, or who received wounds while in active duty which resulted in his death prior to Jan. 1, 1948, to be eligible for all of the educational benefits to which their father would have been entitled.

The House committee on veterans' affairs has recalled the bill to increase subsistence payments to veterans which it had previously approved.

Disposal of War Housing May Be Authorized

The House committee on banking and currency has favorably reported H.R. 3492 transferring the permanent housing program to the Federal Works Administration. The bill also provides for the sale of housing constructed under the Lanham Act (as amended) and establishes preference in such sale.

In general, the price to be paid for war housing sold under this act shall be a price not less than its reasonable value at the time as determined by an appraiser designated by the Federal Housing Administrator. F.W.A. is authorized to provide housing mortgage insurance upon application of the mortgagee.

Under prescribed time limitations of preference after notification of sale, first priority is given for thirty days to the veteran occupying the dwelling; second, for sixty days to the veteran who expects to occupy the dwelling, and, third, for ninety days, to the non-veteran occupying the dwelling. In instances in which it is not practicable to offer each dwelling for sale separately, and in the case of dwellings designed for occupancy of four or more families, preference in purchase shall be granted to any private corporation, association or cooperative society which is the legal agent of veterans who intend to occupy the war housing purchased. An educational institution would come under the categories listed and might purchase such housing when within usable distance for use for veterans' housing.

No action has been taken on the proposed bills to dispose of temporary housing to educational institutions.

"Prefab" Housing May Meet College Needs

The Office of Housing Expediter announced last month that 25 market guarantee contracts for prefabricated houses and building materials of new types have been recommended to the Reconstruction Finance Corporation.

Although the contracts call for the construction of 90,566 houses this year, it is expected that no more than 60,000 will be completed in 1947 owing to delays in getting started and in stepping up production. The prices vary with size and type but are between $5000 and $7500.

N. Y. U. Building Staff Honored

JAMES H. LOTT

Long time service as members of the administrative and maintenance staff of New York University was recognized in a special ceremony for James H. Lott, supervisor of property, and Samuel Barfield who began as a porter in 1907 and is now night supervisor at the Washington Square Center. Dean John T. Madden of the school of commerce presented scrolls of appreciation to both men at a surprise ceremony. The scrolls were signed by himself, the associate dean, two assistant deans and the secretary of the school.

Dean Madden and Mr. Barfield

Food Show May Be Annual Tuskegee Event

Visitors from more than 20 states and from all parts of Alabama were in attendance at the recent food show and nutrition institute held at Tuskegee Institute, Alabama. Subject matter of the three day session centered around sanitation, nutritional adequacy, efficient operation, colorful displays and skillful production.

President F. D. Patterson of Tuskegee Institute announced that plans are being carried forward to make the food show and nutrition institute an annual affair.

Iowa State Orders Latest Atom-Smasher

Something new in atom-smashing machines, a synchrotron, has been ordered by Iowa State College. The machine is capable of producing 70,000,000 electron volts, according to a statement by the manufacturer. The electron accelerator will be used jointly by Iowa State's physics, chemistry and electrical engineering departments.

Floating University Will Sail in September

Plans to conduct a floating university aboard a "baby flattop," or aircraft carrier, were announced recently by Dr. James E. Lough, 75, president of the American Floating University. Dr. Lough is a former instructor at Harvard and New York universities and first launched travel-study courses in 1918. He has conducted study tours to Europe, the Mediterranean, Alaska and five trips around the world.

Adm. Chester Nimitz, chief of naval operations, tentatively approved the sale of a surplus navy escort carrier for the project. The first voyage will be to Latin America, with some 250 students, teachers and business executives aboard. Sailing date: September 15.

Only men students who have completed their sophomore year in an approved American college or university or have served at least two years in the armed forces of the United States will be accepted. A tentative minimum rate of $2000 will be charged for a year of travel-study. The fee pays for tuition, meals, shipboard accommodations and transportation and hotel expenses on shore trips. Visiting professors from Latin-American universities will join the voyage, some for an entire trip.

Eastman Home to Be Photographic Center

University of Rochester officials recently announced that Eastman House, the mansion which was the home of the late George Eastman, founder of the Eastman Kodak Company, is to be converted to a historical and cultural center of photography. The university had been willed the house on the occasion of Mr. Eastman's death and since 1933 it had served as the home of the president of the university.

By the university's release of the 37 room residence, it will make available to the school for other uses a $2,000,000 endowment fund which Mr. Eastman created to maintain the 10 acre estate.

The cost of converting the dwelling so that it may become an institute known as the George Eastman House, Inc., is estimated at $300,000. This will be borne by the Eastman Kodak Company, which will also provide $100,000 annually for operating costs.

FINANCIAL CAMPAIGNS

• PRINCETON UNIVERSITY has already received more than $1,000,000 since last October in its current Third Century Fund. Immediate objective of the campaign effort is a sum of $20,100,000, with a long range objective of $57,600,000. President Harold W. Dodds stated that of the immediate needs $13,500,000 was for added endowment for teaching, research and library. The other immediate needs are $4,600,000 for physical plant, $1,000,000 for faculty and student housing and $1,000,000 for scholarship endowment.

• WAKE FOREST COLLEGE has begun a campaign to raise $6,000,000 by July 1, 1952. About half of that amount has already been pledged and the Baptist churches are planning to raise $1,500,000 during the next three years. As soon as the entire fund has been obtained by pledges or cash, approval for construction of the new campus at Winston-Salem will be given. Jens Frederick Larsen, New York City, is architect for the college in planning the new campus.

• COLUMBIA UNIVERSITY officials recently announced plans for a $5,500,000 law center to house the Columbia Law School. It would bring under the roof all law and government activities of the university and would provide space to house selected outside agencies carrying on research in government.

• SMITH COLLEGE announces that more than half of the $7,000,000 anniversary fund has already been pledged. The campaign will end in June 1950, the 75th anniversary of the founding of the college. The development program calls for immediate increases in faculty salaries and scholarships and improvement in plant equipment. Included in projected plans are a new science building, a religious center, a theater, a residence hall and a renovated student center building.

• RENSSELEAR POLYTECHNIC INSTITUTE officials have announced that gifts amounting to $487,945 have been received during the year. Also under way are research projects for the army and navy involving outlays of more than $250,000 for research projects in metallurgy, chemistry and aeronautics.

GIFTS AND BEQUESTS

• ROLLINS COLLEGE has received $500,000 from the Davella Mills Foundation of Upper Montclair, N. J., as a result of having raised more than $575,000, the intermediate goal of its postwar expansion program. The grant will go toward construction of and equipment for a new library.

• DARTMOUTH COLLEGE recently received a bequest of $615,752 from the estate of the late Sherman B. Ward of Wilton, N. H. This represented one of the largest gifts that Dartmouth has ever received.

• FORDHAM UNIVERSITY recently received a $25,000 check from Cardinal Spellman who explained that the sum was "a gift entrusted to me by a friend who asked me to use it as I saw fit." The donor's name was not revealed.

• CENTENARY COLLEGE OF LOUISIANA is the owner of a 140,000 volt x-ray machine, valued at $5000, the gift of the Highland Clinic of Shreveport.

• THE UNIVERSITY OF MICHIGAN board of regents recently accepted for the university gifts amounting to $49,247.65. The largest of the gifts was a $12,000 grant from Parke, Davis and Company for research in pharmacology.

• OREGON STATE COLLEGE recently received 6200 acres of land in Camp Adair in Oregon from the W.A.A. It will be sold to the Board of Higher Education for the State of Oregon and then W.A.A. will give the board a 100 per cent discount. The gift is contingent on the board certifying in a formal letter that much of the land is substantially hazardous from explosive contamination and agreeing to publicize this fact widely in the state and to post the land with notices of the danger.

• COLUMBIA UNIVERSITY announced recently two bequests of more than a million dollars. A gift of $1,509,389 from the late Frederic Bancroft, librarian, lecturer and author, will be devoted to expanding Columbia University's resources for research in American history. A gift of more than $1,000,000 from the late Dr. Ludwig Schaefer will be used to set up a research scholarship fund for the four most promising students each year who have done research in physiology.

Chief Engineer George E. Sterling and Commissioner Rosel H. Hyde of F.C.C. (both at left) are given highlights of WJIV's programming by John Kurtz, production manager of Syracuse University's new low power FM station.

New FM Station at Syracuse University

Congratulating Syracuse University on its campus low power FM station and noncommercial educational broadcasting project, Federal Communications Commission member Rosel H. Hyde said recently that he "couldn't think of a better use of the radio frequencies for public service. . . . Projects like this are in keeping with government legislation to provide more effective use of communication channels. I think this installation, enthusiastically carried on by everyone concerned, promises a high degree of success."

Commissioner Hyde was one of four F.C.C. members who visited Syracuse University in order to study its recent installation of FM equipment. Availability of FM transmitters like station WJIV at Syracuse University was announced a short time ago in a plan recently presented by the manufacturer to the F.C.C. and the U. S. Office of Education. These small transmitters would be available under this plan to colleges throughout the country at less than a fourth of the cost of previous equipment and thus reduce the cost barrier to noncommercial educational broadcasting.

Muhlenberg May Admit Girls

Muhlenberg College, Lutheran supported college at Allentown, Pa., is expected to become a coeducational institution by 1950, according to recommendations made recently by delegates at the 200th annual meeting of the Lutheran Ministerium of Pennsylvania, representing 604 churches.

Rocky Mountain College Results From Merger

Billings Polytechnic Institute and Intermountain Union College were merged recently, with the combined units to be known as Rocky Mountain College. The college is situated in Billings, Mont.

President W. D. Copeland will head the new institution which is affiliated with the Methodist, Congregational-Christian and Presbyterian churches. Dr. Copeland stated definitely that the institution would be interdenominational and the sponsorship and cooperation of other Protestant fellowships sought.

This fall several new departments will be added and an expansion of business administration and banking courses planned. The former Polytechnic business college will move from downtown Billings to new quarters on the campus. A new building is scheduled for construction this summer to house homemaking study courses, the business college, work in nursing education, biology, premedical and predental education. The college now has 200 acres of campus and nine large stone buildings.

Florida Gets State University

Florida State University is the new name of former Florida State College for Women at Tallahassee, Fla., by virtue of Governor Caldwell's signature and approval of the higher education bill passed by the Florida legislature. The institution will become coeducational, which for all practical purposes it has been during the last year when 700 veterans were enrolled.

Bill Would End Veterans' Eligibility

Two bills have been introduced which would stop the further accruing of eligibility for education and training of men in the armed forces.

One, S. 1392, was introduced by Mr. Morse and five other senators and would substitute the date Sept. 1, 1947, for "the termination of hostilities in the present war" in both Public Laws 16 and 346.

The other, S.J. Res. 123, is a joint resolution which would terminate World War II and establish peace. Certain legislation is exempted from termination as a result of such action but neither Public Laws 16 or 346 are included in such exemption.

If either of these bills is enacted, and the second may likely be passed by unanimous consent during the final days of this session of the Congress, men now in the armed forces will not continue to accumulate eligibility or time entitlement except those who volunteered before Oct. 6, 1946. Also, such action would establish a fixed date for the beginning of the four years during which a veteran must enter upon his education and training and the nine years during which he must complete it.

May Bar Communists From G.I. Benefits

The House veterans' committee on June 18 approved a bill which, if enacted, would bar any veteran from education and training under Public Laws 16 and 346 if he is a member of the Communist party. According to Chairman Edith Nourse Rogers, the action was approved by a majority of the members of the committee. A companion bill in the Senate has been reported out by a subcommittee, but it has not been acted upon by the full Senate committee on veterans' affairs.

Appropriation Needed

The President has requested Congress to appropriate $35,500,000 to permit F.P.H.A. to complete temporary housing projects now under contract with colleges and universities and local governments. This amount was authorized by legislation passed by the Congress in May but the authorization is of no significance unless the appropriation is made.

Federal Education Department Bill Reported Favorably

The Senate committee on expenditures in the executive departments favorably reported out S. 140 to create an executive department of the government to be known as the Department of Health, Education and Security.

A new provision of the approved bill adopted from Senator Morse's bill (S. 1239) directs the bureau of the budget "to make a study of the activities of the several departments and agencies of the federal government not now included under the Federal Security Agency, with a view to determining whether any of their activities should not be transferred to the proposed new department in the interests of economy and simplicity of administration.

This study must be completed and the results reported to Congress by Dec. 31, 1947.

Approvals Revoked for G.I. Education

State governments have revoked approval of some 80,000 business and industrial establishments which they had formerly approved for G.I. training and education. When Public Law 679 was passed in June 1946, the states had approved approximately 400,000 training establishments and educational institutions. The act authorized the V.A. to set up training standards and to subsidize the states to make a recheck of approved establishments. Since only 240,000 have been reexamined and 80,000 disapproved, it appears that some 133,000 will have their approval withdrawn. The chief factor in such withdrawal from the approved list is the inability of the establishment or institution to provide adequate and effective courses.

A total of $2,283,000,000 had been spent by V.A. for veterans' education and training by May 1. Of this amount, $1,867,000,000 was spent during the first ten months of the fiscal year beginning July 1946. The cost for education and training under P.L. 346 is seven times that for the disabled under P.L. 16. The V.A. budget for the fiscal year beginning July 1, 1947, is more than $2,500,000,000.

Presidents Polled on Vet Organization Aid

A cross section poll of top American educators conducted by the Veterans of Foreign Wars reveals that they believe that, of 10 national lay groups listed in the inquiry, the American Association of University Women is the group that has contributed the "most to the progress of education in general in the United States." The U. S. Chamber of Commerce was ranked second, followed by the American Farm Bureau Federation and the American Legion.

Ninety-two college and university presidents responded to the poll. Asked if they favored "the proposal that veterans' organizations lend active publicity and legislative support to a program for educational assistance," the replies varied for different areas of legislation. All but six would welcome such support of salary increases for teachers to attract and retain a high quality of person in the teaching profession; only 13 disapproved of assistance in procuring legislation to provide federal aid to schools to assure an adequate educational program on the state level, provided each state is spending in proportion to its ability to pay.

The ratio was similar, 69 for and 12 against help from veterans' organizations for the establishment of a separate Congressional committee for education rather than the present labor and education or labor and public welfare committees.

The majority opposed by a vote of 33 to 47 the support of veterans' organizations for removal of the nine year limitation now placed on the veteran for completion of his educational benefits under the G.I. bill.

May Increase Minimum Wage

An amendment to the Fair Labor Standards Act of 1938 was proposed by Congressman Madden on June 9. If enacted, the bill, H.R. 3764, would increase the minimum wage for the first year after the effective date of the act to 65 cents an hour; for the second year to 70 cents, and for the third year and thereafter to a minimum of 75 cents an hour. These provisions would go into effect 120 days after the act became law. The bill was referred to the committee.

Survey Indicates 2,500,000 Enrollment for Fall Semester

Under the title "There's Room in the Colleges," *Pic Magazine* published in July the results of its survey of probable enrollment in colleges and universities for the academic year 1947-48.

The report indicates an expected 10 per cent increase in enrollment, bringing it to a total of 2,500,000. There still were vacancies for 46,000 students to be admitted before the opening of the school year. As anticipated, the survey shows many institutions have already accepted all of the students they can accommodate but many others are not yet filled. For the most part, these are the smaller institutions and the newly established colleges, such as Farragut in Idaho and Champlain, Mohawk and Sampson in New York.

Of the 542 institutions included in the study, 34 predict lower enrollment next fall, 96 anticipate no change and the remainder expect to enroll more students than last year. State preference is apparently beginning to be of less consequence as only 28 institutions reported that their students were residents of the state.

Names in the News

Robert A. Doyle, Chicago businessman, has been named vice president of Cornell University. He will assume administrative responsibilities in university planning and development, his appointment becoming effective September 1. He was president of the Orange Crush Company of Chicago until 1946.

Gen. Dwight D. Eisenhower has been named president of Columbia University. In announcing his acceptance, Gen. Eisenhower declared that the appointment would not become effective until completion of his services as chief of staff of the U. S. Army. According to reports, it is likely that he will be inaugurated early in 1948.

Roland W. Harrison has been appointed vice president of the University of Chicago to succeed *Lawrence A. Kimpton* who recently resigned to become dean of students at Stanford University.

Stewart H. Smith has been named president of Marshall College to succeed *John D. Williams* who resigned a year ago. Dr. Smith has been serving as acting president of the West Virginia institution.

Robert Lee Kincaid has been appointed president of Lincoln Memorial University, having served for the last three or four months as acting president. He succeeded *Stewart W. McClelland* who resigned because of ill health.

Herbert F. Clark has been named director of business and finance at George Peabody College for Teachers. He was formerly associated with the executive offices of John D. Rockefeller Jr. *Felix C. Robb,* former registrar at Birmingham Southern College, has been appointed to the newly created office of assistant to the president. *J. E. Windrow* will become the new director of public relations in September. He was formerly director of the college's demonstration school.

Dr. Walter S. Newman, vice president of Virginia Polytechnic Institute, has been named acting president in the absence of *Dr. John R. Hutcheson,* president, who has been granted sick leave until September.

Winning S. Pendergast has been appointed director of food service for Wayne University. Before her appointment, Miss Pendergast was assistant director of the Detroit public school lunchrooms and at an earlier period had served as head of the university's cafeteria.

Prof. Max R. Grossman has been named president of Brandeis University, new nonsectarian Jewish sponsored university at Waltham, Mass. He was formerly director of the Boston University division of journalism. As provost of Brandeis University, Professor Grossman will be charged with administration of all academic interests of the university until a president is named.

Horace M. Benjamin, formerly assistant treasurer at Drew University, has been promoted to the office of business manager at that institution.

Miss E. J. Carbon has just been appointed as the new business officer at Cooper Union, New York City.

Harry J. Ostrander, assistant treasurer and bursar at Yale University, resigned on June 30 and was succeeded by *Spencer F. Miller.* Other new appointments at Yale include the promotion of *Marcus Robbins* from assistant treasurer to comptroller and the naming of *Edward C. Roberts* as assistant comptroller.

Katherine G. Blyley has been named president of Keuka College, succeeding *Henry E. Allen* who resigned last year. Dr. Blyley had been serving as acting president since January. She has been a member of the Keuka College staff since 1939 and was named dean in 1942.

Clarence E. Ficken, dean of Ohio Wesleyan University, has been appointed acting president to succeed *President Herbert J. Burgstahler* who has resigned because of ill health. Dr. Burgstahler has been named to the newly created post of chancellor of the university.

Maj. Gen. Ulysses S. Grant III has been named vice president of George Washington University, the first time such a position has been in existence at this institution in its 126 years.

Frank Bell Lewis has been appointed president of Mary Baldwin College to succeed *L. Wilson Jarman* who resigned because of ill health. Dr. Lewis had formerly been a member of the staff of Davis and Elkins College.

The Very Rev. Joseph R. Slavin, O.P., has been appointed president of Providence College to succeed *the Very Rev. Frederick C. Foley, O.P.,* who has resigned for reasons of health. Rev. Slavin was formerly professor of philosophy at the Catholic University of America.

Thomas O. Bellwood, president of Arizona State College, has announced his resignation, which was effective July 1.

DIRECTORY OF ASSOCIATIONS

Associations of College and University Business Officers

Central Association

President: T. E. Blackwell, Washington University; secretary-treasurer: L. R. Lunden, University of Minnesota.

Eastern Association

President: R. C. Magrath, University of New Hampshire; secretary-treasurer: Boardman Bump, Mount Holyoke College.
Convention: Nov. 30-Dec. 2, John Marshall Hotel, Richmond, Va.; University of Richmond, host.

Southern Association

President: George R. Kavanaugh, Berea College; secretary-treasurer: Gerald D. Henderson, Vanderbilt University.

Western Association

President: William Norton, University of California; secretary-treasurer: William Brand, Stanford University.

Schools for Negroes

President: V. D. Johnston, Howard University; secretary: L. H. Foster Jr., Tuskegee Institute.

Educational Buyers Association

President: Gerald D. Henderson, Vanderbilt University; executive secretary: Bert C. Ahrens, 45 Astor Place, New York, N. Y.

Association of Superintendents of Buildings and Grounds of Universities and Colleges

President: Paul H. Elleman, Ohio State University; secretary-treasurer: A. F. Gallistel, University of Wisconsin.
Convention: May 1948, University of Minnesota.

Association of College Unions

President: Douglas O. Woodruff, University of Utah; secretary-treasurer: Edgar A. Whiting, Cornell University; editor: Porter Butts, University of Wisconsin.

American College Public Relations Association

President: Horace Reneger, Tulane University; secretary-treasurer: Max E. Hannum, Franklin and Marshall College.
1948 Convention Secretary: E. D. Whittlesey, University of Denver.

National Association of College Stores

President: A. W. Littlefield, Barnes and Noble, Inc., New York, N. Y.; executive secretary: Russell Reynolds, 189 West Madison Street, Chicago.

H. Clifford Fox, formerly dean of the college of liberal arts at the university of Dubuque, has been named president of Findlay College in Ohio to succeed *C. A. Morey,* acting president.

Rev. Seymour St. John has succeeded his father as headmaster of Choate School. His appointment was effective June 12.

D. Victor Griffo has been appointed acting director of guidance and coordinator of veterans' affairs at Champlain College, Plattsburg, N. Y. Mr. Griffo was formerly associated with the United States Employment Service office in Brooklyn.

H. D. Pickens has been named president of Southwest Mississippi Junior College, his appointment to be effective September 1. Dr. Pickens is now head of the division of education of Mississippi Southern College.

Joseph E. Gibson, former Louisiana State Department of Education official, has been named president of Northwestern State College at Natchitoches, La., and will succeed *Joe Farrar* who resigned some months ago for reasons of health.

Dr. Claude M. Fuess has resigned as headmaster of Phillips Academy at Andover, Mass., his resignation to become effective in June 1948. He will have been a member of the faculty for forty years, fifteen as headmaster.

Dr. Frederick W. Stengel is retiring as president of Linden Hall School, Lititz, Pa., at the close of the present year. He will be succeeded by *Rev. B. K. Horne,* paster of the oldest and largest Moravian church in America.

Henry C. Kittredge, vice rector of St. Paul's School, Concord, N. H., for the last nineteen years, has been named rector. This is the first time that a lay rector has been named to this position.

Frederick R. Weed has been named headmaster of Roxbury Latin School, West Roxbury, Mass. He will succeed *Dr. George Northrop* who retires this year after fifteen years as headmaster. Mr. Weed, 40, is reported to be the youngest headmaster at Roxbury Latin in its 300 year history.

Dr. Miron A. Morrill will head the publicity department of Cornell College, Mount Vernon, Iowa, and serve as assistant professor of English, teaching the courses in journalism.

William G. Wilcox has been appointed director of the bureau of public relations of Ohio State University to succeed *Harold K. Schellenger* who resigned to accept a position with Byer & Bowman, advertising agency at Columbus, Ohio. Mr. Wilcox was formerly chief of the department of public information for the Ohio Bureau of Unemployment Compensation.

Helen B. Schleman has succeeded *Dorothy C. Stratton* as dean of women at Purdue University. Miss Schleman was formerly director of the women's residence halls at Purdue. *Inez R. Canan,* assistant director of residence halls, will become the new director.

Paul P. Faris, director of public relations at Hendrix College, was recently elected president of Methodist Educational Public Relations Officials, succeeding *Edward D. Whittlesey,* director of public relations of the University of Denver.

James G. Johnson, director of public relations at Evansville College, has resigned, effective July 1. The new director will be *Harold Van Winkle,* a member of the college English department during the last year.

Rev. J. Hugh O'Donnell, C.S.C., former president of the University of Notre Dame, died recently after a long illness. His age was 52. Father O'Donnell was the thirteenth president of the University of Notre Dame, serving from 1940 to 1946, and resigned from the post as required by canon law in July 1946.

Rev. David L. Stapleton, S.J., assistant administrator of the College of the Holy Cross, Worcester, Mass., died recently at the age of 40 years. He had been slated for appointment this fall as professor of dogmatic theology.

Rev. John O. Spencer, president emeritus of Morgan State College at Baltimore, died recently at 89 years of age. He had retired as president of the college in 1937.

PRODUCT INFORMATION

Information on the materials, equipment and supplies with which an institution is built, operated and maintained and which are used in its various departments is of vital interest to those charged with the business operation. College and University Business recognizes the importance of this information and believes it has rendered a real service by grouping manufacturers' announcements and new product descriptions into a separate part of the magazine. We believe this is an infinitely better plan than to mix such information through the editorial pages where it becomes obscure and confusing.

You will find manufacturers' advertisements from pages 41 through 64. Pages 58-63 contain descriptions of new products and items of interest. Further details on any product advertised or described may be obtained without obligation and with a minimum of effort by use of the postcard below.

INDEX TO ADVERTISERS ON FOLLOWING PAGE

USE THIS CARD

This card is detachable and is provided for your convenience in obtaining information on all items advertised in this issue or described in the "What's New" Section. See reverse side.

FIRST CLASS
PERMIT NO. 136
SEC. 510 P. L. & R.
CHICAGO, ILL.

BUSINESS REPLY CARD
No Postage Stamp Necessary If mailed in the United States

2 CENTS POSTAGE WILL BE PAID BY

COLLEGE AND UNIVERSITY BUSINESS
919 NORTH MICHIGAN AVENUE
CHICAGO 11, ILLINOIS

Index to "What's New"

Pages 58-63

Key

355 **Josam Manufacturing Co.**
Adjustable Floor Drain

356 **General Laboratories Co.**
Marking Ink for Glass, Porcelain, Other Lab Materials

357 **Wayne Iron Works**
Catalog of Portable, Permanent Steel Grandstands

358 **Zurn Manufacturing Co., J. A.**
Supplement to Catalog, "Carriers for Wall Fixtures"

359 **Sarco Company**
Steam and Water Mixer

360 **Pittsburgh Corning Corp.**
Booklet on Glass Blocks

361 **Sonneborn Sons, Inc., L.**
Folder on Protection for Building Exterior

362 **Lion Manufacturing Corp.**
Beverage Vender

363 **De Vry Corporation**
Folder on Audio-Visual Education

364 **National Turkey Federation**
"Turkey Handbook"

365 **OK Specialty Company**
Belt Sander

366 **Radio Corp. of America**
Selector Intercom. Systems

367 **Detecto Scales, Inc.**
Scales for Food Service

368 **Ward's Natural Science Establishment**
Catalog of Laboratory Supplies

Key

369 **Blodgett Company, G. S.**
All-Monel Ovens

370 **Ace Company**
Hand Trucks

371 **Berry Brothers, Inc.**
Finish for Floors

372 **Doughnut Corp. of America**
Waffle Baker

373 **Eraser Company, Inc.**
Typewriter Eraser

374 **West Disinfecting Co.**
Automatic Insecticide Sprayer

375 **Iceberg Refrigerated Locker Systems, Inc.**
Folder, "Frozen Food Storage Made Easy"

376 **General Electric Company**
FM Transmitter

377 **Lustra Corp. of America**
Folder, "New Protection Against Airborne Diseases"

378 **Minneapolis-Honeywell Regulator Co.**
Handbook on Heating, Ventilating, Air Conditioning Control Systems

379 **Oakite Products, Inc.**
Booklet on Maintenance, Sanitation

380 **Sterling Tool Products Co.**
Abrative Selector

381 **Rutley Company, H. F.**
Booklet on Kitchen Planning

382 **Ohio Tool and Engineering Co.**
Machine for Cleaning Waste Lines and Sewers

July, 1947

Please ask the manufacturers, indicated by the numbers I have circled, to send further literature and information provided there is no charge or obligation.

WHAT'S NEW					
355	360	365	370	375	380
356	361	366	371	376	381
357	362	367	372	377	382
358	363	368	373	378	
359	364	369	374	379	

ADVERTISEMENTS					
383	388	393	397	401	405
384	389	394	398	402	406
385	390	395	399	403	407
386	391	396	400	404	408
387	392				

NAME _____ TITLE _____

INSTITUTION _____

ADDRESS _____ CITY _____ ZONE _____ STATE _____

Index to Products Advertised

Key — *Page*

383 **Ampro Corporation** — *Movie Projector* 57

384 **Bell & Howell Company** — *Movie Projector* ..... *3rd Cover*

385 **Carrom Industries, Inc.** — *Institutional Furniture* 42

386 **Clark Linen & Equipment Co.** — *Steel Waste Baskets* 56

387 **Continental Car-Na-Var Corp.** — *Floor Maintenance* 44

388 **Dick Company, A. B.** — *Duplicator* 51

389 **Dudley Lock Corporation** — *Locks* 54

390 **Finnell System, Inc.** — *Floor Maintenance* 55

391 **Heinz Co., H. J.** — *Institutional Food* 43

392 **Hillyard Company** — *Floor Maintenance* 48

393 **Hood Rubber Company** — *Rubber Tile Flooring* 49

394 **Horn Co., Inc., A. C.** — *Floor Maintenance* 56

395 **Huntington Laboratories, Inc.** — *Floor Maintenance* 52

396 **Legge Co., Inc., Walter C.** — *Floor Maintenance* 47

397 **Maas Organ Company** — *Carillons* 56

398 **Mills Industries, Inc.** — *Ice Cream Freezer* 53

399 **Minneapolis-Honeywell Regulator Co.** — *Temperature Control* 45

400 **Modern Manufacturing Co.** — *Lawn Mower Sharpener* 54

401 **Schulmerich Electronics, Inc.** — *Carillonic Bells* 50

402 **Sexauer Mfg. Co., J. A.** — *Plumbing Repair Equipment* 56

403 **Sexton & Company, John** — *Institutional Food* ..... *4th Cover*

404 **Sherwin-Williams Co.** — *Weed Killer* 64

405 **Sloan Valve Company** — *Flush Valves* 46

406 **Victor Animatograph Corp.** — *Movie Projector* 41

407 **Weis Manufacturing Co., Henry** — *Cabinet Showers* 54

408 **West Disinfecting Co.** — *Insecticide Dispenser* 50

Makers of 16mm Movie Equipment Since 1910

16mm Sound Motion Picture Equipment

Quality has been the Victor hallmark for more than 36 years of progress in the development of motion picture equipment. Today, Victor users are finding that same quality in the new Model "60"—and at the modest price of only $468. That's why thousands of schools, churches, industrial plants, and homes are enthusiastic users of Victor 16mm sound motion picture equipment.

VICTOR

ANIMATOGRAPH CORPORATION

A DIVISION OF CURTISS-WRIGHT CORPORATION

Home Office and Factory: Davenport, Iowa

New York • Chicago

Distributors Throughout the World

WOOD

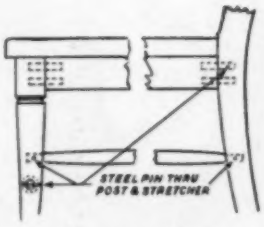
Unexcelled for friendly warmth

CARROM FURNITURE CRAFTSMEN *Build* FOR THE DECADES

Attractive, well-made Wood Furniture combines, to a high degree, both literal and figurative warmth and friendliness. From a practical, physical standpoint *wood*, because it is to a great extent a non-conductor of heat, has a friendly, comfortable "feel" that invites use. But over and above this . . . wood possesses a natural *emotional warmth* that is normally generated by intimate, friendly things.

Carrom Wood Furniture possesses, in a great measure, these characteristics of "Friendly Warmth" . . . appealing to the natural instincts of the average person. This is especially desirable for institutional use where the individual finds himself more or less remotely situated from home and friends. Both physically and psychologically, he enjoys the gracious and beneficial influence of "friendly warmth", generated by the ageless spirit and fibre of WOOD!

Carrom Wood Furniture is made especially to meet institutional needs . . . college and nurses' dormitories, hospital rooms, ward or lounge. Whether used to furnish an entire building or just a room, its basic styling, simple lines, functional adaptability and strong construction combine with its inviting atmosphere of "friendly warmth" to provide a maximum degree of intrinsic worth.



RAILS PINNED TO POSTS

It is not enough that Carrom posts, legs and rails have a tight drive-fit. As further assurance of serviceability, a wood pin or metal insert is driven through the joined part to engage the post, leg or rail and hold it more securely.

CARROM INDUSTRIES, INC., LUDINGTON, MICHIGAN

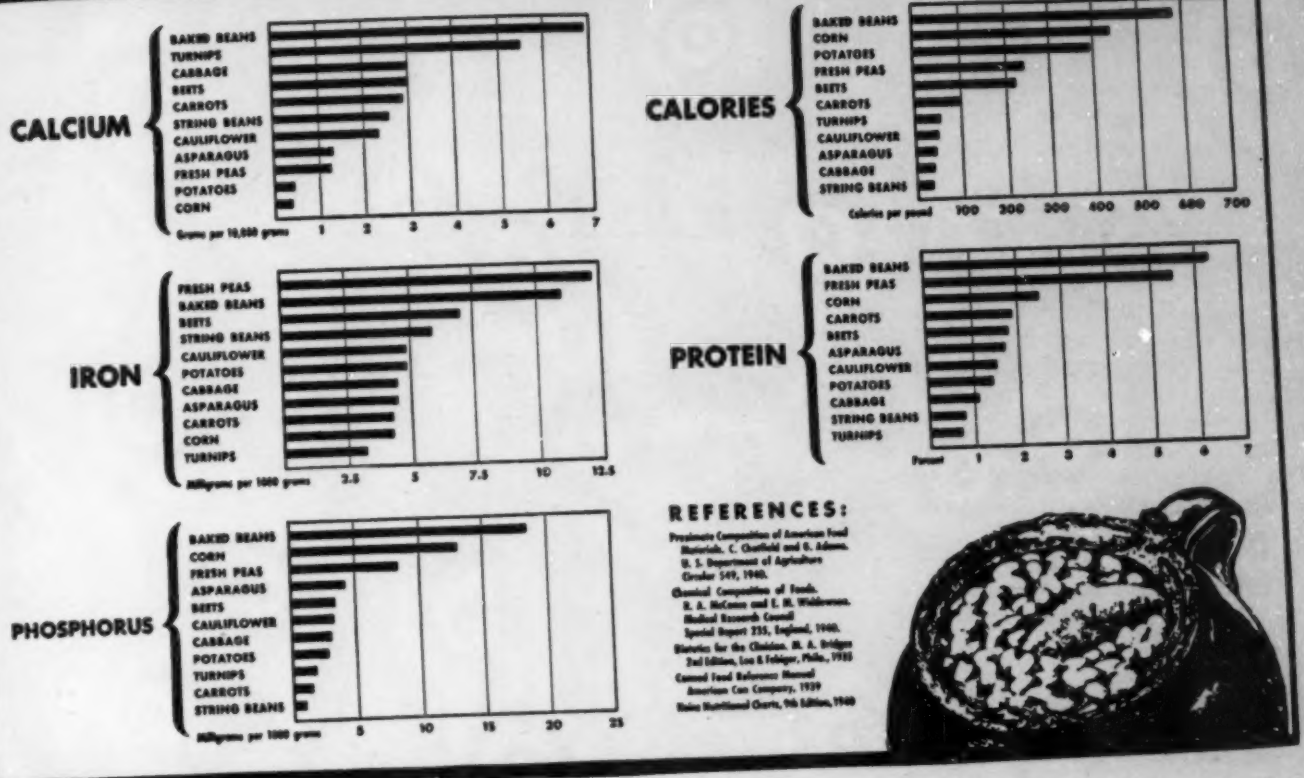
CARROM

WOOD FURNITURE FOR DORMITORY SERVICE

Heinz Oven-Baked Beans

. . . A GREAT FOOD VALUE!

On Every Count Baked Beans Stand High Among Cooked Vegetables



REFERENCES:

Proximate Composition of American Food Materials. C. Chatfield and G. Adams. U. S. Department of Agriculture Circular 549, 1940.

Chemical Composition of Foods. R. A. McCance and E. M. Widdowson. Medical Research Council Special Report 235, England, 1940.

Dietetics for the Clinician. M. A. Bridges 2nd Edition, Lea & Febiger, Phila., 1935

Canned Food Reference Manual American Can Company, 1939

Heinz Nutritional Charts, 9th Edition, 1940

DELICIOUS Heinz Oven-Baked Beans come fully prepared—ready to heat and serve!

They are a hearty, appetizing meal by themselves—equally good when served with frankfurters, hamburgers, meatloaf or sandwich dishes. Heinz Oven-Baked Beans are richly nutritious—a great, stick-to-the-ribs energy-giving food, with the famous "home-tastin' " flavor that students go for!

HEINZ OVEN-BAKED BEANS ARE MONEY SAVERS, TOO!

Institutional size—each tin will serve eighteen 6-oz. portions of hearty, appetizing, home-tastin' Heinz Baked Beans.

57

Ask Your Heinz Man About

HEINZ OVEN-BAKED BEANS

CAR-NA-VAR VACUUM CLEANER

. . . According to Independent Testing Laboratory Report!

That's the remarkable performance turned-in by Car-Na-Var in recent tests conducted by an authoritative, independent university organization. Yes, of all cleaners tested, the new, silent Car-Na-Var Vacuum Cleaner *removed more dirt per minute than any other machine!*

Never before has a portable heavy-duty vacuum machine offered such powerful cleaning action plus such quiet, efficient operation. Designed for both "wet" and "dry" pick-up, the new, silent Car-Na-Var is the ideal machine for hospitals, hotels, schools, offices and other buildings where fast, quiet, efficient cleaning is essential. Reversible squeegees *inside* the nozzle—an exclusive Car-Na-Var feature—helps increase cleaning efficiency! New compact design makes the Car-Na-Var easy to use . . . easy to keep clean. Sturdy construction means trouble-free operation . . . long life.

Write for free circular that fully describes this remarkable Car-Na-Var Vacuum Cleaner.

CONTINENTAL CAR-NA-VAR CORP.
1645 East National Avenue Brazil, Indiana

. . . removes more dirt per minute than any other machine tested."

RUBBER OR BRASS SQUEEGEE FOR "WET" PICK-UP

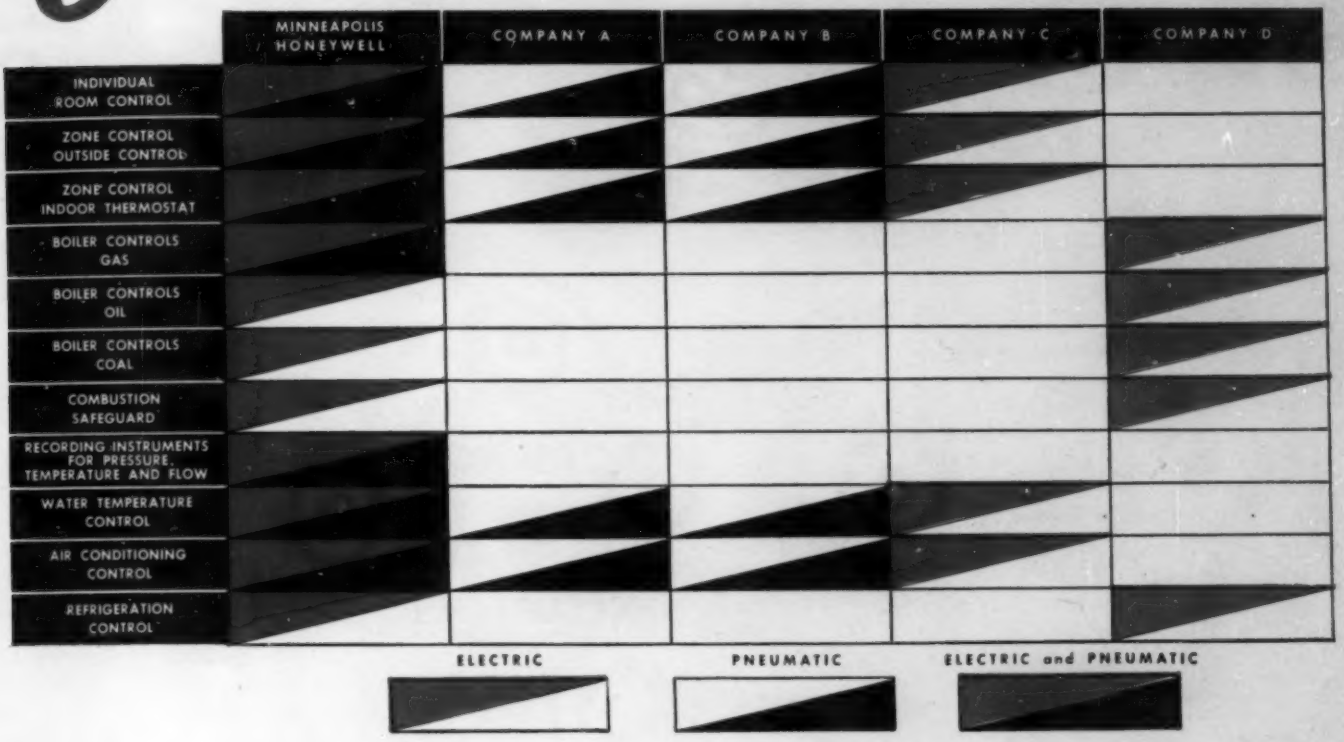
FELT SQUEEGEE OR BRUSH FOR "DRY" PICK-UP

IMMEDIATE DELIVERY!
ORDER NOW . . .
PRODUCTION IS LIMITED!

Adaptable for Blowing

ONLY HONEYWELL gives you

Controls for Every Purpose!



THE chart tells the story! Only Minneapolis-Honeywell can supply a complete line of controls to meet every college and university requirement. The uniformity of design and quality you get when installing controls of one manufacturer make for dependable, coordinated operation throughout all the buildings on the campus—from the heating plant to the lecture room. You benefit first by placing full responsibility for all phases of automatic control with a single manufacturer. It's this same manufacturer—Minneapolis-Honeywell—who is able to give you unbiased advice based on broad engineering experience, about every type of control. And Honeywell maintains a nation-wide staff trained to provide service from plan stage throughout the life of every installation, electric or pneumatic.

Backing this comprehensive operation is the Honeywell reputation for dependable performance, established for over 60 years. Standardize on Honeywell—the leader . . . Minneapolis-Honeywell, Minneapolis 8, Minnesota . . . In Canada: Toronto 12, Ontario.

MINNEAPOLIS **Honeywell**

CONTROL SYSTEMS

Only Sloan

can say this:

63% OF ALL HOTELS* ARE SLOAN EQUIPPED—

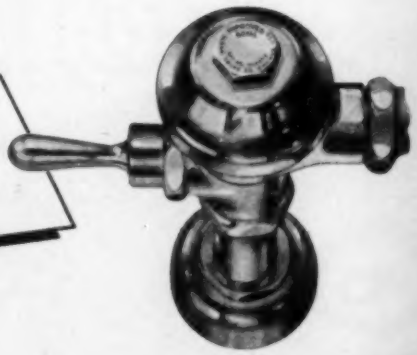
90% OF THESE ARE EXCLUSIVELY SLOAN!

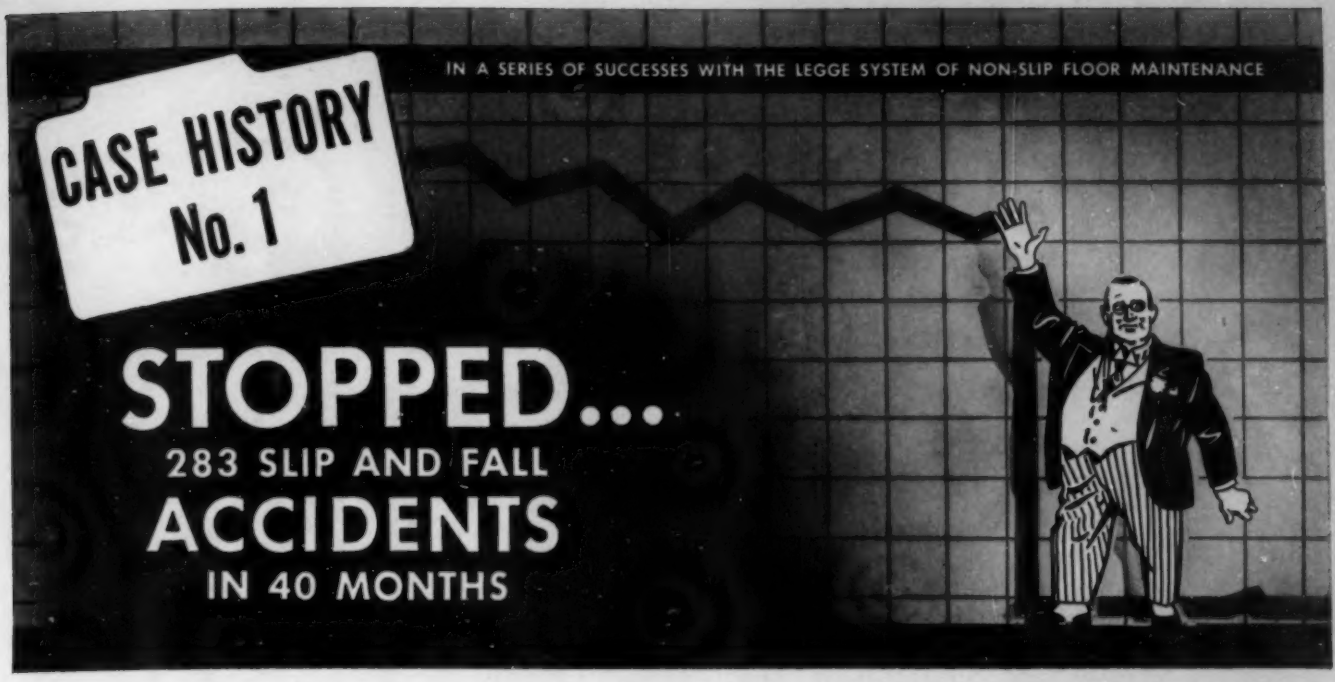
There are several reasons for Sloan's pre-eminence. For one thing, maintenance costs are reported as low as ¼ of 1c per valve *per year.* Then, too, Sloan Flush Valves save water; they protect public health by preventing back syphonage; they can now be whisper quiet; they have unlimited life—yet cost no more. That is why more Sloan Flush Valves are sold than all other makes combined.

SLOAN VALVE COMPANY • 4300 W. Lake St., Chicago, Ill.

**Hotels of 100 rooms or more.*

sloan *Flush* valves




IN A SERIES OF SUCCESSES WITH THE LEGGE SYSTEM OF NON-SLIP FLOOR MAINTENANCE
CASE HISTORY No. 1
STOPPED...
283 SLIP AND FALL
ACCIDENTS
IN 40 MONTHS

At a large New York hospital, 283 employees were injured by slips and falls on walking surfaces from 1942 to 1945. Suddenly the accidents stopped.

For the hospital had adopted the Legge System of Non-Slip Floor Maintenance . . . the scientific floor safety program which has eliminated slip hazards for leading institutions, office buildings and plants.

A *PROVEN* FLOOR SAFETY PLAN

In hundreds of similar cases the Legge System has *proved* it makes floors lastingly non-slip . . . reduces accidents up to 95%. It has been tested and approved by leading laboratories, institutes and safety organizations . . . is endorsed and recommended by many casualty insurance companies.

CORRECT FLOOR MAINTENANCE COSTS LESS

LEGGE'S 3-WAY PROTECTION

- √ Non-slip Safety
- √ High, Lustrous Finish
- √ Floor Preservation

YOUR 3-WAY SAVINGS

- √ Reduced Insurance Premiums
- √ Maintenance Costs 50% Lower
- √ Floor Replacement Unnecessary

The Legge System is engineered to your problems. Legge floor experts first investigate your floor conditions . . . develop a tailor-made program for you . . . then supervise application of the proper preparations by your janitorial staff. Since it requires special training to prescribe the right floor treatment, this service is available only through Legge representatives.

YOUR FLOORS CAN SHINE . . . STILL BE NON-SLIP

Legge Non-Slip floors are beautiful, too . . . can be buffed to a high gloss; actually become more slipproof with each buffing. And Legge preparations clean as they polish . . . preserve your floors.

CAN YOU AFFORD UNSAFE FLOORS?

Compensation payments, damages, inflated insurance premiums, costly maintenance, floor replacement . . . these are the costs of faulty floor maintenance. Our free booklet, "Mr. Higby Learned About Floor Safety the Hard Way," explains how management can stop these losses. It's yours without obligation. Clip this coupon to your letterhead and mail today.

LEGGE SYSTEM
OF *Non-slip* FLOOR MAINTENANCE

New York • Boston • St. Louis • Chicago • Ft. Worth • Seattle • Cleveland
Los Angeles • Washington, D. C. • Denver • Rochester • Pittsburgh • Detroit

WALTER G. LEGGE CO., INC.
11 West 42nd St., New York 18, N. Y.
360 N. Michigan Ave., Chicago 1, Ill.
Gentlemen:
Please send me your free book, "Mr. Higby Learned About Floor Safety the Hard Way."

Signed_____

Title_____

Type of Floor_____

Approx. Area_____ sq. ft.

CU-1

Hillyard Hi-Quality Products Protect
EVERY TYPE SURFACE... BASEMENT FLOOR TO ROOF TOP
In thousands of Colleges, Universities, Public and Private Schools Hillyard Products are doing an excellent job of preserving and maintaining a high standard of cleanliness, safety and economy. Thru Hillyard methods maintenance costs are reduced and many man hours are saved in application and daily maintenance. Hillyards have Floor Treatment Specialists in every part of the country. Write or wire us today for the Hillyard man nearest you, his advice and recommendations are entirely FREE.

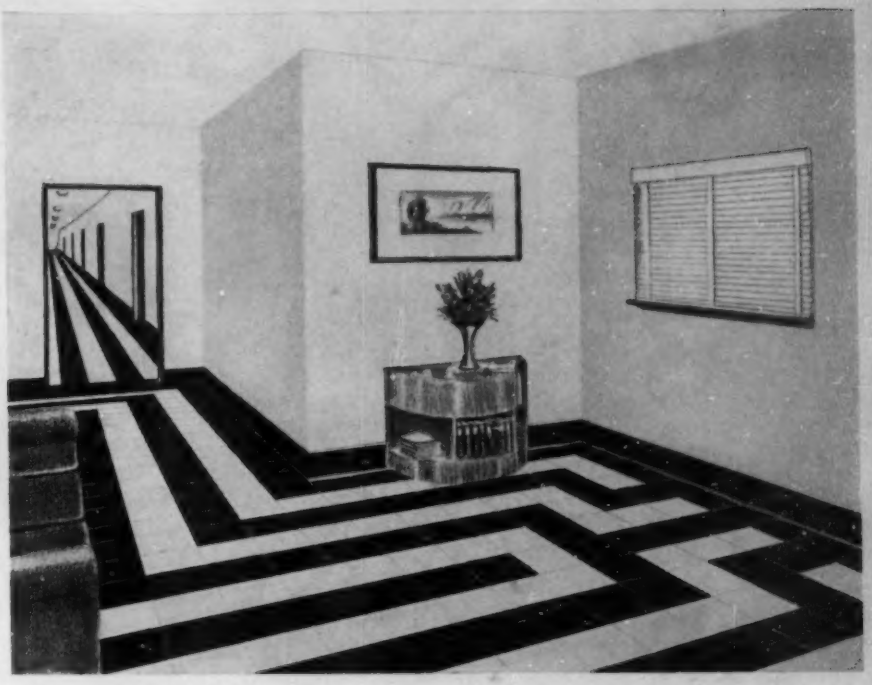
HILLYARD SALES COMPANIES

370 TURK ST. SAN FRANCISCO 2, CALIF. DISTRIBUTORS HILLYARD CHEMICAL CO. ST. JOSEPH, MO. BRANCHES IN PRINCIPAL CITIES 1947 BROADWAY. NEW YORK 23, N. Y.

SERVICE

Between editorial material and advertising pages in this and every issue —there's a detachable, postage prepaid card . . . to help you get product information on one or a dozen items with a minimum of effort and time. As you read the advertising pages and the descriptions in the "What's New" section, check the items that interest you . . . use the card. Sign it, mail it. The manufacturer of each item checked will be asked to send you complete details, no charge, no obligation.

COLLEGE and UNIVERSITY BUSINESS



TIME TO *graduate* *to* HOOD's FINER FLOORING

Now, with students gone and halls temporarily empty, is the time for *you* to think about "graduating" to Hood Rubber or Asphalt Tile Flooring. More and more of the nation's schools and colleges are specifying Hood because they have discovered that this finer resilient flooring gives them everything they ask for in *modern* school floors.

Hood Rubber or Asphalt Tile Flooring gives them unexcelled quality and traffic-tested wear. It gives ease of maintenance and *permanence* of color. It gives resilience that absorbs shock, reduces vibration and subdues sound. What's more, it provides floors that can be custom-built to fit the functional or decorative requirements of the interior.

For finer resilient flooring, count on B.F.Goodrich leadership in research and Hood mastery of manufacture. Send for your copy of the Hood Flooring Catalog today. Choose Hood — choice of experts since 1925.

Dead Insects
DO TELL TALES!

Outside of their own kind possibly, nobody mourns the loss of destructive insect pests. *Dead*, they spin a tale of heightened morale, increased efficiency and sanitary safe-guarding of product.

Dead, they also bear strong testimony to the effectiveness of a double-barreled team that spells sheer murder to insects of almost every kind...West *Vaposector Fluid* dispersed by the *new*, streamlined West VAPOMAT.

Just *one* filling of the West Vapomat with Vaposector Fluid will effectively control *roaches and similar crawling insects* in areas of 50,000 cubic feet. Will also achieve a "Positive Kill" of *flying* insects in areas of 500,000 cubic feet!

Completely automatic, the West Vapomat is electrically operated . . . light, easy and economical to use. Simply fill, set the time clock, and plug into AC or DC outlet.

Especially designed for effective use in electric sprayers, West Vaposector Fluid comes in several formula variations to meet the specific needs of every industry. Non-combustible, it's harmless to everything but insect pests.

Fill in the coupon below. One of West's 475 trained representatives will be glad to explain this more effective method of pest control. No obligation!

Products That Promote Sanitation

★ BRANCHES IN PRINCIPAL CITIES OF THE UNITED STATES AND CANADA

WEST Chemical Company

CLIP TO YOUR LETTERHEAD

42-16 WEST STREET
LONG ISLAND CITY 1, N.Y., DEPT. CU

We are interested in a demonstration of the new West VAPOMAT ☐ Please send Literature ☐

Free!

Name_____ Position_____

CLEANSING DISINFECTANTS • INSECTICIDES • KOTEX VENDING MACHINES
PAPER TOWELS • AUTOMATIC DEODORIZING APPLIANCES • LIQUID SOAPS

The American University, Washington, D. C.

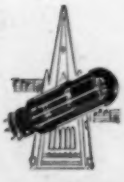
In Memoriam—
The Ringing Tribute of
CARILLONIC BELLS

Paul F. Douglass, president of the American University, writes:

"A group of American industrial leaders joined with Governor Ernest G. Draper of the Federal Reserve System and William A. Julian, Treasurer of the United States, to honor their common friend, the late Daniel Calhoun Roper, for fifty years a public servant. The selection of Schulmerich 'Carillonic Bells' is a tribute which will hallow his memory for the years, as each morning and evening the great tunes of our faith ring out over the nation's capital from our hilltop high above the Potomac."

It is the privilege of CARILLONIC BELLS to be selected again and again to perpetuate in music a name honored in memory. The surpassing beauty of tone, the clarity and flawless accuracy which distinguish its performance make CARILLONIC BELLS most widely preferred for the high purpose of a bell memorial.

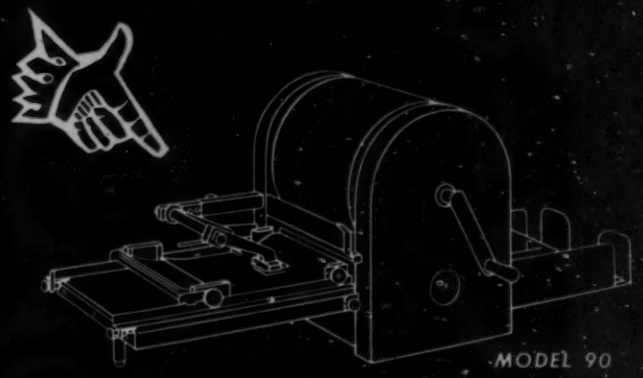
CARILLONIC BELLS is an outstanding achievement of the technical knowledge and resources of Schulmerich, the foremost and largest manufacturer of modern carillons. This instrument is recognized for a tonal excellence meeting the most exacting present-day standards. We shall be glad to send you further details of CARILLONIC BELLS, if you will write to us, at Dept. COL-7.

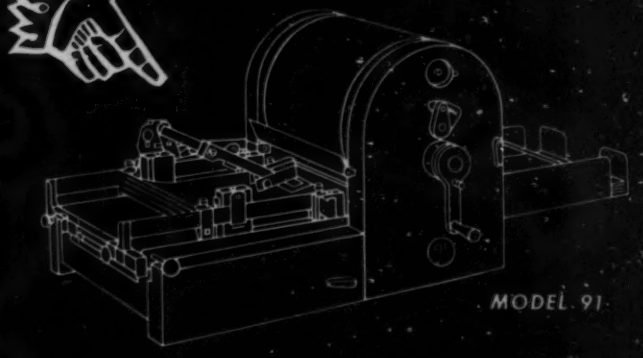


Schulmerich ELECTRONICS, INC.
SELLERSVILLE, PA.

"CARILLONIC BELLS" • TOWER MUSIC SYSTEMS • ACOUSTIC CORRECTION UNITS
SOUND DISTRIBUTION SYSTEMS • CHURCH HEARING AIDS

Take your choice





Automatic feed, hand-operated Mimeograph brand duplicators

Ready for delivery now

MODEL 90: for highest quality duplicating at the lowest cost consistent with quality. Ideal for "short runs" . . . for schools and branch offices.

MODEL 91: copies by tens or hundreds—in color or in clear, permanently readable black and white. Results you can be proud of. Medium price.

Easier Stencil Preparation—

Better Duplicated Copies

The new high-visibility cushion sheet for use with Mimeotype (blue) stencil sheets is a major improvement in stencil duplicating.

High visibility—easier on the eyes when typing stencils and proofreading. Easier, quicker corrections.

High-quality copy, sharp letter outlines, blacker reproduction.

Ask your distributor for details.

A. B. DICK COMPANY, Dept. CU-747
720 West Jackson Boulevard, Chicago 6, Illinois

☐ Place my order for.....Model.....Mimeograph brand duplicator with the distributor nearest me.

☐ Have a salesman call.

☐ Send me more information on Mimeograph brand duplicators.

NAME.....

ORGANIZATION.....

ADDRESS.....

CITY.....STATE.....

COPYRIGHT 1947, A. B. DICK COMPANY

The Mimeograph brand duplicator

IS MADE BY A. B. DICK COMPANY · CHICAGO

MIMEOGRAPH is the trade-mark of A. B. Dick Company, Chicago, registered in the U. S. Patent Office.

WAX Protects

BEAUTIFIES, REDUCES MAINTENANCE

ARE YOU seeking ways to save maintenance expense? To prolong the life of your costly floor coverings? To beautify the floors throughout your building? Neo-Shine Wax is the answer. It's a Concentrated Wax . . . actually 50% richer in wax content . . . and will cover a much greater area per gallon. It dries bright without polishing . . . gives your floors a clean, lustrous sheen that lasts and lasts. Use Weatherall Waterproof Wax for areas that require frequent mopping. Write for samples.

HUNTINGTON LABORATORIES, INC.
HUNTINGTON, INDIANA • TORONTO

NEO-SHINE®
SELF-POLISHING WAX
® WEATHERALL WATERPROOF WAX

Who will fill them?

Who will fill the shoes of the valued and trusted employe who leaves your college or university? When you set up a new department or when your institution grows to a point where new department heads or assistants are needed, how will you select exactly the right person for the job? There is probably no more difficult and delicate combination of personal qualifications required anywhere than in building an efficient, smoothly functioning college or university organization. You must have a sufficient number of qualified applicants from whom a genuine choice can be made. No matter how excellent the opportunity you offer, to attract the precisely right person many people must be told about it. Tell them about your opening in a Classified advertisement in College and University Business. During these days of personnel migration, it is vital to your institution that adequate personnel be secured immediately to replace employes who have accepted appointments elsewhere or to provide necessary staff for new departments. College and University Business is the only magazine in the United States reaching the people who would be most interested in your need or availability. Over *5,000* college business managers, comptrollers, purchasing agents, superintendents of buildings and grounds, residence hall directors, and food service managers receive and read College and University Business every month. You can save time by advertising your personnel needs in the classified advertising section of this magazine.

1. WHAT IS IT? A modern, scientific device for freezing ice cream *on your own premises.*

2. HOW DOES IT DO IT? Completely automatically, (if it's a Mills). It transforms ice cream mix (obtained ready to use from your dairy) and flavor into delicious ice cream of the quality your customers want—and it does it swiftly, practically, economically.

3. WHY SHOULD YOU HAVE ONE? You control both quality and cost... serve and sell ice cream under your own brand name . . . enjoy the added sales volume of frosted malteds and other soft ice creams . . . reap the greater profits made possible through lower costs and increased sales—and you do it only with a counter freezer.

CONSIDER... **MILLS COUNTER FREEZER** *AND WRITE US FOR DETAILS TODAY*

MILLS INDUSTRIES, INCORPORATED
DEPT. 524, 4100 FULLERTON AVENUE, CHICAGO 39, ILLINOIS
Makers of Mills Master Ice Cream Freezers and Hardening Cabinets

FOR NEW BUILDINGS OR PRESENT STRUCTURES

Weisway

CABINET SHOWERS

A typical battery installation of Weisway Cabinet Showers

The Weisway Standard Cabinet Shower meets the urgent need for a genuine quality shower. Precision-built of service-tested materials. Walls are 14 B & S gauge aluminum alloy finished white baked-on enamel. Receptor is Armco Iron, one-piece vitreous porcelain enameled, with Foot-Grip, No-Slip floor surface. Meets quality standards required in buildings of best construction.

Mail coupon now for full information. *Weisway Standard Model Cabinet Showers are now available for prompt shipment.*

HENRY WEIS MANUFACTURING CO., INC.
739 Weisway Building, Elkhart, Indiana

Gentlemen: Please send me detailed information about Weisway Standard Cabinet Showers.

Name_____

College or University_____

City_____ State_____

ALWAYS IN SERVICE

SAVE TIME and MONEY WITH A

MODERN LAWNMOWER SHARPENER

ALL Your Mowers Precision Ground With a Modern Mower Sharpener

ANY Mower Sharpened EASILY (5-inch Edger or 36-inch Power Mower) in 10-20 minutes with a MODERN LAWN MOWER SHARPENER. NO DISMANTLING . . . Handles, Rollers, Wheels AND Motors need NOT be removed to sharpen ANY MOWER. No Hand FILING needed! . . . MODERN precision grinds to the very ends of BOTH *left or right* reel blades. SAME brackets hold bottom knife for *scissor-sharp* MATCH! No EXTRA ATTACHMENTS NEEDED! Order Now! ONLY $241.50 (less motor) F.O.B. Pasadena. (½ or ¼ H.P. single phase motor recommended.)

MODERN MANUFACTURING CO.
160 N. FAIR OAKS AVE. • PASADENA 1, CALIF.

Self-Locking

FOR GREATER PROTECTION!

RD-2

RP-5

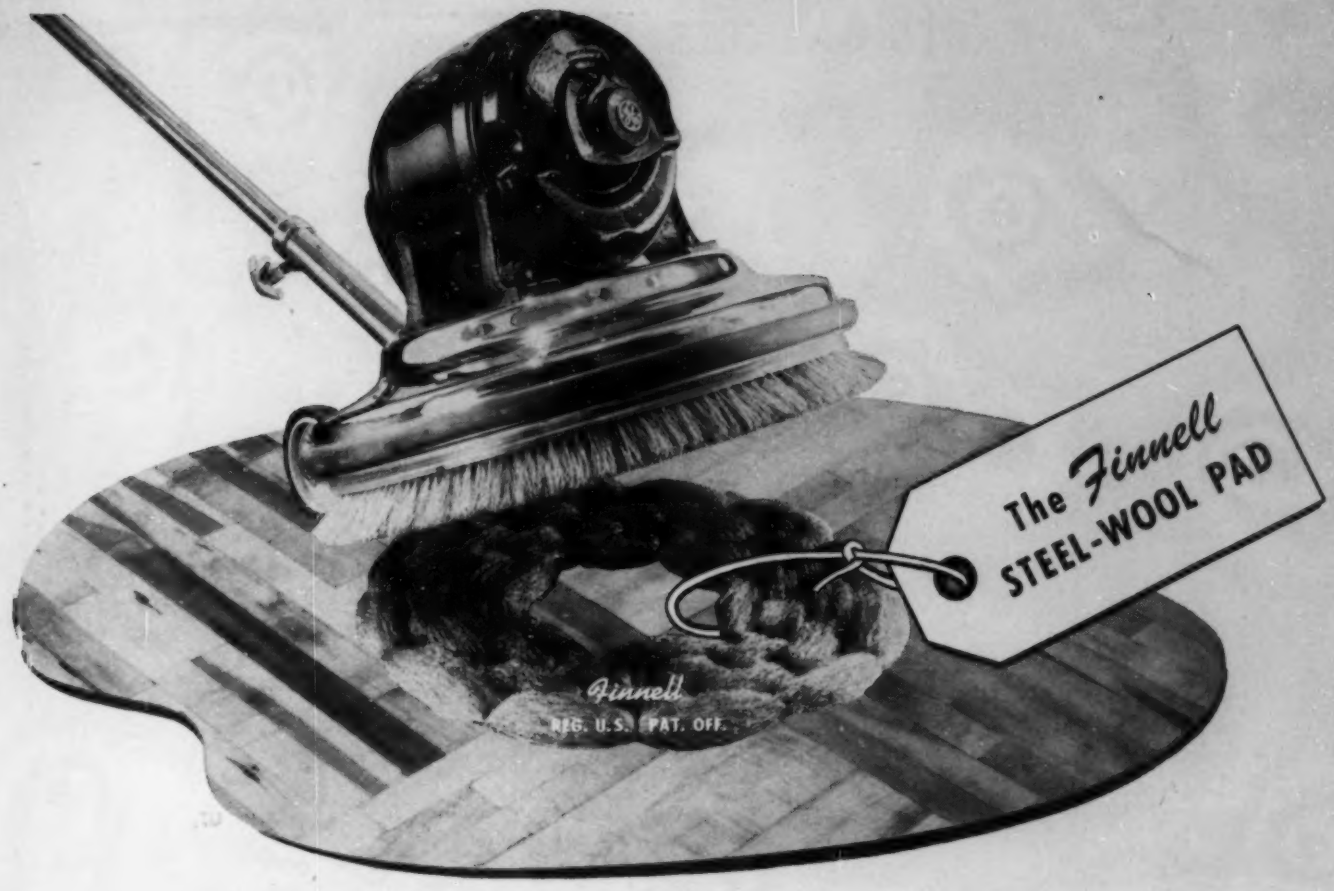
Both the stainless steel RD-2 and the solid brass RP-5 Dudley School Locks *automatically lock* when the shackle is pushed back in the case, requiring *complete redialing* to open.

These locks have a well-earned reputation for sturdiness and dependability and easy opening. That's why they're the most popular locks ever used in American schools!

Write for complete details

DUDLEY LOCK CORP.

DEPT. 722 • 570 W. MONROE ST. • CHICAGO 6, ILL.



It's Welded FOR LONGER WEAR *and* FOR FINER CARE OF WAXED FLOORS

This improved type of construction *triples* the life of the pad by allowing it to wear *evenly* and by preventing shredding and bunching. *Welded construction* gets all the wear out of all the material! And this same feature that is responsible for longer wear also results in finer care. With uniform contact assured, the *Welded Pad* must and does do a finer job faster!

Thus the *Finnell Welded Pad* furthers the economy of steel-wooling—the simplest way to care for waxed floors in between periodic refinishings. In a single operation, steel-wooling dry cleans and polishes waxed floors to new brightness and to a safer, wear-resisting finish.

Finnell Welded Pads are self-adjusting, and can be used on any fibre brush, with any disc-type machine. *Sizes:* 5, 7, 11, 13, 15, 18, and 21-inch. *Grades:* No. O—*Fine*, for cleaning, polishing, and burnishing. No. 1—*Average*, for cleaning and scrubbing. No. 2—*Coarse*, for use on rough floors. No. 3—*Very Coarse*, for removing paint and varnish.

For consultation or literature on *Finnell Pads*, *Waxes*, and *Floor-Maintenance Machines*, phone or write nearest *Finnell* branch or Finnell System, Inc., 4407 East St., Elkhart, Ind. Canadian Office: Ottawa, Ont.

Finnell-Processed
WAXES
Finnell-Kote Solid Wax
Finnell Liquid Kote
Finnell Cream Kote
Finnell Paste Wax
Finnell Liquid Wax
Fino-Gloss Liquid Wax
Several Types

FINNELL SYSTEM, INC.
Pioneers and Specialists in
FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

ll Steel WASTE BASKETS

Battleship construction—baked enamel finish—heavy gauge steel—rolled edges—rubber feet—smooth round corners. Available in office Green, Red, Brown or White. Minimum order one dozen.

FREE NAME IMPRINT on lots of 10 dozen or more.

No. 1213. 11" Sq. Top, 13" High.
6 Doz. lots, Doz. **$16.50**
Doz. lots $17.10

No. 1314. 12" Sq. Top, 14½" High.
6 Doz. lots, Doz. **$17.25**
Doz. lots $18.00

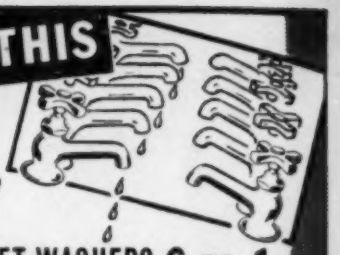
Established 1899

CUB 7-47

Clark Linen & Equipment Co.

303 W. Monroe St., Chicago 6, Ill.
3841 N. E. Second Ave., Miami 37, Florida

TESTS LIKE THIS



PROVE THAT "EASY-TITES" OUTLAST ORDINARY FAUCET WASHERS 6-TO-1

Numerous military installations, hotels, schools, etc., have made this test. They have installed "EASY-TITE" 300°F. Fabric-reinforced Washers in "ear-marked" faucets, placed ordinary washers in an opposite line, then noted results over a period.

"EASY-TITES" have always outlasted the ordinary washers 6-to-1, usually remaining in "active service" long after the tests were concluded.

"EASY-TITES," built of DUPONT NEOPRENE, withstand extreme high temperatures upwards of 300°F. Fabric-reinforced like a tire, they won't split or mush out of shape. Install modern "EASY-TITES" to cut your water and fuel bills, reduce labor costs and prolong the life of costly fixtures.

FREE 102-PAGE CATALOG — lists over 2,000 'SEXAUER' Triple-Wear Replacement Parts and patented Precision Tools for maintenance of plumbing and heating systems, as advertised in THE SATURDAY EVENING POST. Write for your free copy.

J. A. SEXAUER MFG. CO., INC., DEPT. U7,
2503-5 THIRD AVE., NEW YORK CITY 51.

SEXAUER
SPECIALISTS IN PLUMBING AND HEATING MAINTENANCE MATERIALS FOR OVER 25 YEARS

IT'S FREE! Send for this 50th Anniversary hand book on how to care for your floors!

WOOD
LINOLEUM
RUBBER
TERRAZZO
CONCRETE
TILE
CORK
COMPOSITION
MARBLE

Get this new 1947 book of Modern Maintenance Methods for floors. Contains practical hints on cleaning, refinishing, polishing and sealing all types of floors under regular and special conditions of service.

Represents 50 years of experience of the Horn Laboratories and the endorsement of nationally known manufacturers of floors and floor coverings who through their associations have tried, tested and approved Horn Products. Use the coupon for your free copy.

A. C. HORN CO., INC. Established 1897
43-36 Tenth Street, Long Island City 1, New York

Please send free a copy of your new 1947 book . . .
"Floors without Flaws"

NAME _____
CARE OF _____
ADDRESS _____
CITY _____ STATE _____

"beautiful clear tones . . . a great blessing . . . thrilled with the beauty and performance . . . invaluable to the music program . . . superior to anything else on the market . . ."

TATTNALL SQUARE BAPTIST CHURCH
Macon, Georgia
"The set of Maas Chimes in the belfry of our church has been by common consent declared a great blessing to our community."

THE MORAVIAN CHURCH
Sturgeon Bay, Wisconsin
"We are pleased beyond expectations with our Maas Chimes. Their beautiful clear tones add much to our worship services."

FIRST BAPTIST CHURCH
Childress, Texas
"I think every person in our church appreciates this addition to our worship program. The chimes are invaluable to the music program and serve to call attention to spiritual worship."

ST. RITA'S CHURCH
Santa Rita, New Mexico
"My congregation and the public of Santa Rita in general, are simply thrilled with the beauty and performance of your Maas Chimes."

BAY SHORE COMMUNITY CONGREGATIONAL CHURCH
Long Beach, California
". . . my tests and personal analysis and observations convince me beyond a doubt that the Maas Cathedral Chimes are superior to anything else on the market."

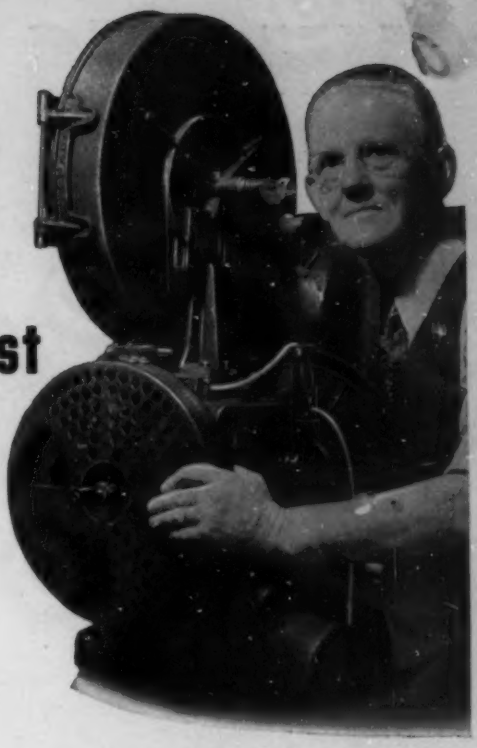
MAAS CATHEDRAL CHIMES

Room 28, 3015 Casitas Ave., Los Angeles 26, Calif.

Write for descriptive literature (Specify organ you have)

"I prefer AMPRO for 16mm. sound!"

says the Professional Projectionist



The professional projectionist is in an ideal spot to pass expert opinion on the merits of 16 mm. sound projectors. Either he operates 35 mm. units for theatrical purposes—or 16 mm. sound projectors on a commercial basis. Frequently, he operates all leading 16 mm. machines—and can make comparisons under actual projection conditions. Because it is his profession, he knows how to judge tone quality, illumination, ease of operation, and durability. *We believe that most professionals who have had the opportunity to compare will recommend Ampro for 16 mm. sound-on-film! However, we urge you to check and verify this for yourself.*

Specific Reasons why professionals prefer **AMPRO**

Richer Tone Quality:
The Ampro "Premier 20" utilizes the latest 12-inch Jensen Permanent Magnet Dynamic Speaker which reproduces sound faithfully, realistically—with Class A Plus amplification of the same high quality used in professional movie and radio broadcasting.

Brilliantly Clear Pictures:
A very fast Intermittent means that a larger portion of the projection cycle is spent in viewing the picture. The entire Ampro optical system is engineered for maximum brilliance, clarity and sharpness.

Easier to Operate:
Easy to set up, simpler, quicker to thread; easier to operate, because motor and lamp switches and controls are mounted on one illuminated panel; speed control and reversing switches readily accessible on centralized control plate; easier to service—parts are more conveniently accessible for cleaning and adjustment . . . all replacement items are readily accessible.

Longer, Satisfactory Service:
Ampro projectors are ruggedly built for longer, more efficient service. Their remarkable records in all branches of the U. S. armed service—and with leading industrial concerns, educational institutions, school systems all over the world—are overwhelming proof of their superior performance under all conditions.

Write for Circular:
Mail coupon today for fully illustrated circular giving details, specifications and prices on the new Ampro "Premier 20" 16 mm. Sound-on-Film Projector.

CUB747

AMPRO CORPORATION
2835 N. Western Avenue, Chicago 18, Illinois

Please send me full details on the new Amprosound "Premier-20" 16 mm. Sound-on-Film Projector. I am also interested in

☐ Ampro "Imperial" 16mm. Silent Projector ☐ Amproslide Model "30-D" Dual Purpose Projector
☐ Amproslide 2" x 2" Projector ☐ Ampro 8 mm. Silent Projector

Name _____

Address _____

City _____

State _____

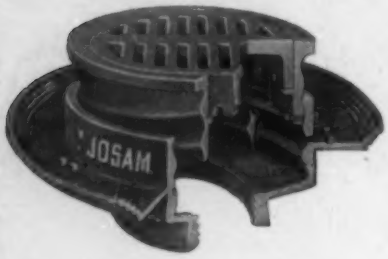
A General Precision Equipment Corporation Subsidiary

WHAT'S NEW. . . . . .

The easiest way to get more information about the new products described in this section is to use the postage paid card opposite page 40. Just circle the key number on the card which corresponds with the number in the headline of each item. COLLEGE and UNIVERSITY BUSINESS will send your request to the manufacturer.

Floor Drain — CUB 355

Adjustable to Various Floor Levels



Whether the drain has been set too high or too low, the problem can be overcome by means of a new floor drain announced by the Josam Manufacturing Company. Where, for some reason, a floor level is changed after the drain is installed, the Leveleze Floor Drain will meet the new level by means of an adjustable top that permits elevation or depression of the drain.

Formerly, if a drain had to be reset in a concrete floor, it was necessary to tear out the floor construction, disconnect the drain, remove the nipple, install a new nipple, reconnect the drain at the proper level and patch the area. Now, it is necessary only to chip out the finish, loosen the adjustable top, adjust it to the proper elevation and patch the finish. The drain body and arch are not disturbed, time and labor are saved and costs are reduced. Application for terrazzo, tile, linoleum, composition, wood block, brick or other finish is said to be similarly advantageous.

The Josam Leveleze Drain can be furnished in combination with the Josam Leveleze deep seal "P" trap with rolled thread, adjustable cleanout and flush floor cleanout and with or without a backwater valve. The adjustable cleanout top permits the drain top and cleanout plug to be set at different levels. The adjustable top, completely detachable from the drain body, is held in any position by a set screw until the floor construction sets, a feature that expedites repairs to floors, installation of brass top or floor covering or conversion of the floor to another use without disturbing the drain body or drainage lines or cutting the arch.—*Josam Manufacturing Company, 356 Ferguson Building, Cleveland 14, Ohio.*

Permanent Marking Ink — CUB 356

For Glass, Porcelain, Other Lab Materials

A new ink that permanently marks glass, porcelain, rubber, photographic films and other laboratory materials and that does not require heat for fixation is now being produced by the General Laboratories Company. Known as Labink, a patented trade name, it is available in red, black, white and blue. The red, black and white can be used directly on the surface to be marked, but the blue is to be used directly only when permanence is not desired or when the surface is to be protected from abrasion. The blue becomes permanent, however, if a thin undercoat of white is applied. The blue is recommended for porcelain refractories and other ceramic materials because, when fired, it becomes a permanent black and can be seen even at red heat.

In case of error, Labink can be wiped off with water before it dries. It is said to be resistant to acids, alkalis, usual laboratory solvents and high temperatures.—*General Laboratories Company, 249 Windsor Street, Cambridge 39, Mass.*

Steel Grandstands — CUB 357

Described in New Catalog

The complete Wayne line of portable and permanent steel grandstands is described in a new 28 page catalog available from the manufacturer. All types of grandstands —indoor and outdoor, temporary and permanent—are presented in pictures, drawings and text. Information on the selection of the proper stand for any application is included as is a list of Wayne grandstand installations, arranged geographically for ease in selecting one near by for inspection. Each type of stand is pictured, accompanied by details of construction and erection and complete descriptions and technical information on sizes, dimensions and design.—*Wayne Iron Works, Wayne, Pa.*

New Wall Closet Fittings — CUB 358

Reduce Installation Costs in Campus Washrooms

Up to now, the advantages in sanitary convenience offered by wall hung closets have been somewhat defeated by the added expense of installation of this type of fixture in campus washrooms. To overcome this financial handicap, the Zurn Manufacturing Company has developed Wall Closet Fittings that make it simpler, cheaper and easier to install the wall hung closets, a feature that should enable more schools to take advantage of their obviously desirable features.

The company's new hanger, simplifying the installation of wall closet bowls which provide an unobstructed sweep of the floor and eliminate dirt collecting pockets and leaky floor outlet connections, is discussed in Supplement No. 46-3 to Catalog No. 39, "Carriers for Wall Fixtures." Zurn fittings can be used with any manufacturer's wall type closet

bowl, the folder points out. In addition to complete descriptions of fittings, specifications are augmented by layouts, charts and photographs.—*J. A. Zurn Manufacturing Company, Plumbing Division, Erie, Pa.*

For Hot Water at Remote Points — CUB 359

Steam Pipe Can Be Tapped

To provide hot water at remote points for showers and wash basins, it is no longer necessary to pipe hot water long distances or to install separate water heaters and temperature regulators, according to the Sarco Company. Instead, the company recommends tapping in on a steam pipe with the new Sarco steam and water mixer which, being streamlined to a bare 26 inch length with a maximum 5 inch width, can be housed easily in the smallest washroom. The built-in Sarco liquid filled thermostat provides automatic temperature control, as set by key, and hot water capacities are said to be surprisingly large. For example, with a steam pressure of 75 p.s.i., 200 gallons an hour could be raised in temperature from 50° to 120° F. The entire construction is brass with renewable valve heads and seats of stainless steel and there is a union connection on steam and water inlets. The maximum steam pressure is 125 p.s.i.g. and the steam pressure must be 20 per cent higher than the water pressure.—*Sarco Company, 475 Fifth Avenue, New York 17, N. Y.*

Booklet on Glass Blocks — CUB 360

Revised to Meet Needs of Modular Coordination

The Pittsburgh Corning Corporation announces the revision of the booklet on the installation of glass blocks in schools and other public buildings in accordance with the requirements of modular coordination. The revised edition contains seven pages of details illustrating basic principles for installing glass blocks in combination with other modular products and is available immediately.—*Pittsburgh Corning Corporation, 632 Duquesne Way, Pittsbugh 22, Pa.*

Protection for Building Exterior — CUB 361

New Product Described in Folder

Because Hydrocide Colorless helps to preserve the original appearance of building exteriors by checking the absorption of dust, soot and dirt, maintenance departments will be interested in the new four page folder that tells the story of this Sonneborn "Building Saver." This product is an invisible, water repellent treatment for exterior concrete and masonry building walls above grade. Comparative test data are included in the folder, indicating the protective efficiency of Hydrocide Colorless. Results of water repellency tests made on concrete, masonry and Celotex are presented, too, as are application data and coverage figures.—*Building Products Division, L. Sonneborn Sons, Inc., 88 Lexington Avenue, New York 16, N. Y.*

Beverage Vender — CUB 362

Has Application in Campus Buildings

A beverage vender that will probably win popularity in residence halls and outlying buildings, particularly in those for service personnel, has been announced by the Lion Manufacturing Corporation. The new Lion Vender is equipped with a standard nickel coin mechanism designed to permit quick replacement with a positive cheatproof coin changer that accepts nickels, dimes and quarters and delivers correct change to the patron. The new vender is said to yield 1200, 9 ounce, cold, carbonated drinks for each service of sirup and cups, each drink being freshly prepared, uniformly blended and automatically delivered. A mechanical counter is provided to record the total number of drinks dispensed. The new vender is of stainless steel construction with interior surfaces finished in medium light gray protective enamel, occupies 24 by 30 inches of floor space and operates on 110 volt, 60 cycle current only. —*Lion Manufacturing Corporation, 2640 Belmont Avenue, Chicago 18, Ill.*

Audio-Visual Education — CUB 363

Services Discussed in New Folder

Individuals concerned with current developments in the field of audio-visual education will be interested in a new folder which can be obtained without charge from the Educational Department of the De Vry Corporation. The treatise includes many and varied professional services available to educational and religious institutions by the corporation through its educational staff, headed by Charles R. Crakes, internationally known authority on audio-visual education.—*Educational Department, De Vry Corporation, 1111 Armitage Avenue, Chicago 14, Ill.*

Meat Type of Turkey — CUB 364

Means "Thanksgiving" Every Day

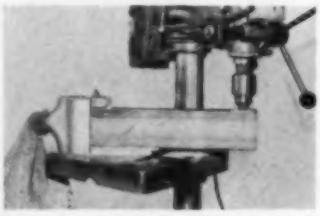
Food buyers, chefs and dietitians will find profitable information in the "Turkey Handbook," which was written largely by and for the men and women who make the serving of good food a business. Through the development of the modern meat type of turkey, this typical American bird has progressed from its place of honor in the Thanksgiving feast to one of daily homage, an achieve-

ment that holds special significance to the institutional eating establishment. Today's meat type of turkey, according to the handbook, is said to produce almost 50 per cent more finished meat than do regular turkeys. Moreover, it is pointed out, two thirds of this abundant meat is white and only one third is dark meat and with the increase in quantity there has been an accompanying increase in quality.

This complete handbook not only tells of the development of this economical meat but includes a summary of Wayne University yield and cost studies, facts on buying turkey for institutions, on preparation, on roasting, on carving, even recipes for institutional use.—*National Turkey Federation, Mount Morris, Ill.*

Belt Sander — CUB 365

Operates as Drill Press Attachment



A new development in surface finishing equipment known as the OK Belt Sander is a drill press attachment that offers many obvious applications on the campus. A handy inexpensive attachment, it is said to fill needs that do not justify buying large sanding machines or to supplement the uses of large units.

Providing a simple, practical method for many surface finishing jobs on wood, metal, plastic and other materials, the new device weighs less than 5 pounds, stands 5 inches high and measures 3¼ by 10½ inches at the base, which is bolted to a drill press table. By moving the table, the attachment can be adjusted to handle sanding belts from 26 to 36 inches in length. The unit consists of an aluminum base with a backing plate or platen, a driven pulley mounted on a ground steel shaft and running on precision ground ball bearings, and a cast aluminum driver pulley mounted on a ½ inch ground steel shaft to fit into the drill press chuck.

The sander accommodates belts from ½ inch to 3 inches in width. Furnished with each attachment, which comes assembled ready for use with any drill press, are two sanding belts, one coarse grit and one fine grit. The sander is suitable for performing all kinds of sanding, grinding, surfacing, deburring and finishing operations, according to the manufacturer. An illustrated folder, "KO the Work With the OK Belt Sander," is available.—*OK Specialty Company, Department N-44, 4655 North Clark Street, Chicago, Ill.*

Selector Intercom Systems — CUB 366

Fill a Variety of Campus Needs

RCA's new line of selector intercom systems offers many combinations to meet the needs of the various departments on campus. The line features five different models of master and remote stations with the number of stations limited only by the number of selector keys on the master station. Two models of the master have six selector keys, two have 12 keys and the fifth is a "remote" through which calls can be initiated and received from the master to which it is connected.

Cabinets are 10⅜ by 7⅛ by 5⅞ inches in matte-black plastic with satin-chrome speaker grilles. Selector keys have transparent identification strips for numbers, initials, names or titles of personnel. Engineered for simple, low cost installation, junction boxes for each master station can be installed under desks and out of view and there are no unsightly wires. Additions can be made to the system at any time without affecting the original installation and each location can be equipped with precisely the type of intercom needed.

Noneavesdrop operation makes it impossible for another station to listen in on conversations not intended for intercommunication. The system can be used for quick conferences without members of the personnel having to leave their offices and, too, it permits paging at several stations simultaneously.—*Radio Corporation of America, RCA Victor Division, Camden, N. J.*

Scales for Food Service — CUB 367

Operations Described in New Literature

Detecto Scales, which meet demands from heavy duty scales for checking in shipments of food to small portable scales for dietitians checking consumers, are described in new literature available from Detecto Scales, Inc. Data are available, too, on models that provide for accurate weighing in all other food preparing operations: large platform scales to accommodate packages of all dimensions; check-weighing scales for food coming out of storage; scales for chef's food preparation problems, and scales to check ingredients and dough mix for baking done on the premises.—*Detecto Scales, Inc., 1 Main Street, Brooklyn 1, N. Y.*

Teaching, Laboratory Supplies — CUB 368

Listed in Entomology Catalog

More than 400 teaching, laboratory and scientific supplies, ranging from special steel insect pins to bioplastic materials for embedding specimens in transparent plastic, are listed in Ward's new Equipment and Supplies Catalog No. 475. Showing equipment, supplies and technics employed in biology, entomology, chemistry, general science and botany, some 125 illustrations and descriptive text constitute teaching aids in themselves. For example, the entomology sections show the detailed construction and use of nets, aspirators for collecting tiny insects, killing jars, specimen containers, pins, labels, envelopes, spreading boards; mounting, shipping and storage boxes, and cabinets. Microscopes, lamps, magnifiers, binoculars, projection equipment and other classroom and laboratory aids are included.—*Ward's Natural Science Establishment, Rochester, N. Y.*

All-Monel Ovens — CUB 369

Are Announced by Manufacturer

To satisfy a strong demand for attractive, long lived, commercial and institutional cooking and baking equipment, the G. S. Blodgett Company announces that it will employ No. 35 monel metal in all 22 models of its internationally known 900 Series of sectional gas-fired baking, roasting and general food cookery ovens. The entire exterior body, including legs, angles and drafthood, will be of this metal as will all interior surfaces and parts subject to corrosion. Monel is said to be rustproof and impervious to ordinary acids.—*G. S. Blodgett Company, 53-59 Maple Street, Burlington, Vt.*

New Hand Trucks — CUB 370

"Carry the Load," According to Folder

"Take the load off your men—and off your mind and pay roll, too!" That is the catchy slogan adopted by the Ace Company to present its new line of hand trucks to be marketed under the trademark, "Ace." An illustrated folder showing models, specifications and prices calls attention to the "thrust absorber" principle by which the load is carried directly from the nose plate to the frame and not through a welded joint. Another point of emphasis is the guarantee against defective material and workmanship. This is possible, according to the folder, because only 16 gauge, 1 inch O.D. steel tubing is used in manufacturing the trucks, only skilled specialists are employed in their production and all trucks are carefully inspected before shipment.—*The Ace Company, 12-40 North Orange Street, Ocala, Fla.*

Finish for Floors — CUB 371

New Product Offers Appeal on 10 Counts

Ten reasons that will appeal to superintendents of buildings and grounds in selecting a finish for floors are given by Berry Brothers for their new product, Berryseal: it penetrates, it seals the pores, it waterproofs, it marproofs, it is sanitary, it provides safe footing, it is economical, it is easy to keep clean, it saves on maintenance and it is fast drying.

Described as ideal for wood floors that are exposed to hard wear and tracked-in dirt and water, Berryseal is recommended for use wherever a clear, durable, waterproof, dirtproof finish is desired, particularly in gymnasiums, classrooms, recreation rooms and cafeterias. Moreover, it is reported to be an excellent clear sealer for woodwork, keeping out moisture and preventing warping.

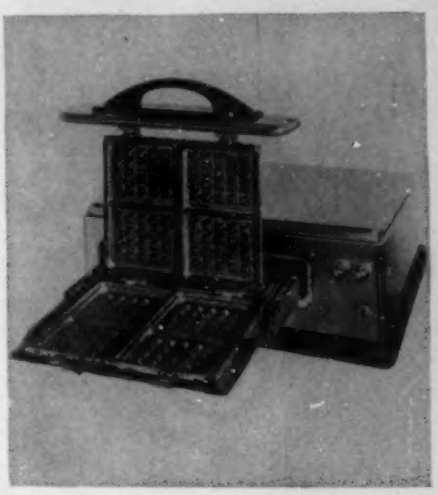
A generously illustrated folder, elaborating upon the qualities of this new product, is available. In addition to telling *where* to use Berryseal, this new booklet tells *how* to use it, giving directions for its application on new work and resanded surfaces, on open grain woods and on concrete and composition floors.—*Berry Brothers, Inc., Detroit 7, Mich.*

Waffle Baker — CUB 372

Cuts Costs, Increases Efficiency

This "waffle news" will be welcome news in campus dining halls and cafeterias: After eighteen years' research and experimentation, the Doughnut Corporation of America, through its Downyflake Baking Mix Division, has developed an entirely new type of waffle baker. To management, this offers a means of keeping costs down and of increasing kitchen efficiency; to patrons, a taste treat.

Known as the Downyflake Waffle Robot, this new waffle baker is said to guarantee two advantages: volume production, even during rush hours, and the complete elimination of waffle sticking. A new baking principle eliminates



"hot spots" by maintaining correct heat level at all times, during baking and idling, and an exclusive polymerization process for the grids eliminates waffle sticking. Moreover, the robot requires no greasing.

All electric, operating on either A.C. or D.C., the Downyflake Waffle Robot is completely automatic. An exclusive nesting arrangement saves up to 50 per cent on counter space; each unit makes 22 waffles without supervision, signals indicating when waffles are ready. An automatic batter dispenser pours the correct amount of batter for each waffle. The many advantages of the robot are covered by a one year guarantee, according to the manufacturer.—*Doughnut Corporation of America, 393 Seventh Avenue, New York 1, N. Y.*

New Type of Eraser — CUB 373

To Conceal "Typewriter's Mistakes"

College and university correspondence will make a better personal appearance if the secretary who types it is provided with the new Rush-FybRglass-Eraser. Featuring an advance in design and composition, this new typewriter eraser is enclosed in a plastic holder that fits the hand and looks somewhat like a mechanical pencil. The eraser medium is a substance called "FybRglass," whose thousands of hair thin fibers brush away errors by picking up the ink. Always just the width of a single letter, the eraser is recommended also for correcting fluid duplicator

masters and offset masters. It leaves no eraser crumbs to gum up the typewriter mechanism; no shield is required to protect carbon copies. When a long lasting FybRglass refill finally wears down completely, it can be replaced with a new refill in 15 seconds. The product is unconditionally guaranteed.—*The Eraser Company, Inc., 231 West Water Street, Syracuse 2, N. Y.*

Automatic Insecticide Sprayer CUB 374

Said to Be Effective Up to 500,000 Cubic Feet

Maximum penetration and coverage at a minimum of time and cost are the advantages offered in the new Vapomat, announced by the West Disinfecting Company as a completely automatic, electric insecticide sprayer. Just one filling with Vaposector Fluid, a highly concentrated, permeating insecticide especially formulated for use in electric sprayers and atomizers, is said to effect a "positive kill" of flying insects in areas of 500,000 cubic feet.

Operating on A.C. or D.C. current, the West Vapomat is housed in a silver colored, hammered aluminum case and weighs approximately 8 pounds. Its automatic shut-off prevents burn-outs, according to the manufacturer; its new dial control regulates volume of dispersal, and its lengthy electric cord is of neoprene, which means that it is oil resistant. Additional information or a free demonstration is available on request.—*West Disinfecting Company, 42-16 West Street, Long Island City 1, N. Y.*

Frozen Food Storage Equipment CUB 375

Described in Illustrated Folder

"Frozen Food Storage Made Easy" is the title of a folder that is expected to find avid readership in food service departments. The growing need for better, more economical bulk storage of frozen foods is satisfactorily met by the Iceberg Refrigerated Locker, the illustrated folder points out, because the design permits the addition of sections to meet changing needs. The various models range in storage capacity from approximately 30 to 480 cubic feet. The lockers are made up of factory built sections, each unit being complete and self contained. No special preparation of the premises is necessary and no insulation of the room or building is required. Only the interior of the drawers of the Iceberg Refrigerated Locker is at zero or below; the room in which the unit is placed remains at normal temperature. Low cost of installation and operation is among many other features described in the folder. —*Iceberg Refrigerated Locker Systems, Inc., Empire State Building, New York 1, N. Y.*

Proposed Plan for FM CUB 376

Will Expand Use in Colleges

The cost barrier to noncommercial educational broadcasting will be eliminated if the proposal to the Federal Communications Commission and the U. S. Office of Education by the General Electric Company's Electronics Department is adopted. The G-E FM station plan calls for use of a small transmitter with a power output of 2½ watts which would be the modulator section of a large G-E FM transmitter. This plan would enable schools to use available educational FM broadcasting channels.

The proposed transmitter would provide a 5 or 6 mile range, which is enough to cover most college campuses, fraternity or sorority houses and surrounding student homes, and could be received on standard FM receivers. The transmitter operates on no more electricity than that required for a three way floor lamp, about 250 watts.

The transmitter is simple to install, according to G-E, and provides for future expansion of the college's broadcasting facilities. When funds are available and operating staffs organized, the low power transmitter can be enlarged to a full size educational FM station—up to 50 kw.—and eventually become part of a statewide network.—*Electronics Department, General Electric Company, Syracuse, N. Y.*

Folder Tells CUB 377

Effectiveness of Germicidal Units

"New Protection Against Airborne Diseases" is the title of Lustra Corporation's new folder on commercial germicidal units, telling their effectiveness and many present day applications. Illustrations show two new types of Protect-O-Ray wall units for upper air disinfection, one overhead unit combining germicidal radiation with fluorescent lighting, one plastic housed portable unit for localized applications and two portable units of the open type for individual room sterilization and utilization in walk-in refrigerators and food storage rooms.—*Lustra Corporation of America, 40 West Twenty-Fifth Street, New York 10, N. Y.*

Heating, Ventilating Systems CUB 378

Discussed in New Handbook

A new handbook on heating, ventilating and air conditioning control systems, published by the Minneapolis-Honeywell Regulator Company, describes a number of specially designed instruments built to school requirements. The booklet lists also control systems that make possible hot water to meet the requirements of lavatories, gymnasium showers, kitchens and swimming pools. Refrigeration control systems for food storage, experimental laboratories and similar applications are discussed also, as are controls for boiler rooms to make possible safe and efficient operation and recorders to check on the efficiency of the heating plant.—*Minneapolis-Honeywell Regulator Company, Minneapolis 8, Minn.*

Maintenance, Sanitation Tasks — CUB 379

Discussed in 12 Page Digest

Maintenance, food service and housekeeping departments will find helpful, practical data on the handling of 62 commonly recurring sanitation and maintenance cleaning tasks in the new 12 page digest which has been published by Oakite Products, Inc.

For the maintenance department, there is special information on such operations as descaling sterilizers, autoclaves, waterstills; cleaning unit heaters in place; removing rust spots before repainting metal surfaces; stripping paint from metal beds, chairs, tables, radiators and similar items prior to repainting; removing rust and slime from swimming pools.

For the food service department, there is a section devoted to cleaning operations, including descriptions of specialized materials and methods for dishwashing by machine and by hand, for washing glassware; for cleaning and sterilizing kitchen utensils and equipment; for cleaning and detarnishing silverware, and for many other tasks.

For the housekeeping department, there is information on such tasks as floor maintenance; cleaning of walls, woodwork and other painted surfaces; deodorizing waste disposal closets; cleaning of lavatories and showers.—*Oakite Products, Inc., 118A Thames Street, New York 6, N. Y.*

Abrasive Selector — CUB 380

Simplifies Sanding, Finishing Operations

A comprehensive slide rule type of abrasive selector, announced by Sterling Tool Products Company, is expected to simplify sanding and finishing procedures. The result of more than three years' research, the abrasive selector indicates (1) the kind of abrasive for the job, (2) abrasive grit sizes for various finishing operations on many types of material, (3) the type of coating (open, closed, waterproof), (4) the lubricant to be used, if any, and (5) the proper pad to be used on the sander. Marginal notes provide information of value in specific applications. The new selector, plastic coated for durability and designed in three colors for quick accurate reading, indicates the proper abrasive combinations for 120 specific sanding and finishing problems.—*Sterling Tool Products Company, 363 East Ohio Street, Chicago 11, Ill.*

Food Service Installations — CUB 381

Discussed in Illustrated Booklet

Institutions planning installation of food service facilities will be interested in a new booklet on kitchen planning, "Rutley Recommends." The booklet outlines the company's services available, discussing a typical installation from beginning to end. Each phase of the job is described and a layout and several photographs are shown.

Pictures and text illustrate sanitation technics with both standard and specially fabricated equipment. A list of institutions that have employed the services of the company's engineers in developing food service facilities is included.—*H. F. Rutley Company, 23 Lafayette Street, Brooklyn, N. Y.*

For Cleaning Waste Lines — CUB 382

New Machine Incorporates Safety, Speed

Both safety and speed are incorporated in the new Electric Eel Jr., a modern machine for cleaning waste lines and sewers—and at a reputedly remarkable saving in time. Its outstanding feature of safety, the Double Cable, fully protects the operator; the hazard of the flexible cable's rapidly becoming uncoiled is eliminated by the exclusive cable container. A rotating inner cable with stationary outer sheath guards against injury from breaking cables. Because the cable can be reeled from the container while the machine is in operation, delay in cleaning out lines is avoided.

The Electric Eel Jr. can be used any place where sewers are concealed not only for opening up clogged drains but for cleaning them thoroughly as well. It is said to be a handy tool where plumbing consists of short turns. Spiral tools, drills and fishing tools mounted on coil springs clean out pipes ranging from 1¼ to 2½ inches.—*Ohio Tool and Engineering Company, 128 North Spring, Springfield, Ohio.*

WANT ADVERTISEMENTS

The rates for want advertisements are: 10 cents a word; minimum charge, $2.50.
Address replies to COLLEGE AND UNIVERSITY BUSINESS, 919 N. Michigan Avenue, Chicago 11, Ill.

POSITIONS WANTED

Physical Plant Manager—Competent superintendent of buildings, grounds, power plant, utilities, construction, farm and recreational areas; efficient personnel, purchasing, refectories and business manager; of broad training and extensive experience serving fifteen years with a foremost college. Write Box CW20, COLLEGE AND UNIVERSITY BUSINESS.

Superintendent of Buildings and Grounds—Graduate architect, member A.I.A. and Association of Superintendents of Buildings and Grounds; 15 years' experience in complete charge of operation, management, maintenance; also architectural work in connection with repairs, alterations, additions and new buildings; available July 1, 1947. Write Box CW15, COLLEGE AND UNIVERSITY BUSINESS.

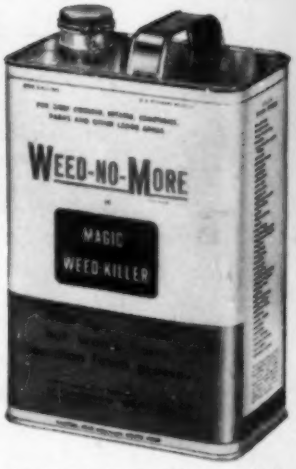
POSITIONS OPEN

Supervisor of Building Maintenance — With architectural or structural engineering background; should have experience as supervisor of building maintenance and trades; write stating experience, when available, and salary desired; application will be kept confidential; Chicago metropolitan area. Write Box CO9, COLLEGE AND UNIVERSITY BUSINESS.

For More Effective Weed Control with 2,4-D

WEED-NO-MORE 40

AMERICA'S NO. 1 WEED KILLER



Available in 1-gallon and 5-gallon cans, 55-gallon drums

IT'S EFFECTIVE! The ester formulation of 2,4-D is recognized by authorities as being more effective over a wider range of weeds and conditions than other types of 2,4-D. Weed-No-More is the original butyl ester formulation of this selective weed killer.

IT'S ECONOMICAL! One gallon of Weed-No-More 40 concentrate makes 400 gallons of spray, enough to treat two acres. Weed-No-More's butyl ester formula—plus a special emulsifying agent—makes for better adherence to broadleaved weeds and faster absorption by the weed plant, thus producing quicker, surer, and more effective killing action.

IT'S AVAILABLE NOW! Many of America's best-known golf courses, parks, cemeteries, and schools now use Weed-No-More 40 regularly for beautiful weed-free turf. Safe to use—easy to use—assures savings of hundreds of dollars (on many golf courses, thousands of dollars) compared with previously used methods of weed control.

For full information, phone your local dealer, or write any of the companies listed below.

Write for Free Movies!
Informative 17-minute 16mm full-color sound movie presents actual proof of the remarkable killing action of Weed-No-More. Available for entertainment showings to committees, board meetings. Write Film Dept. D-6, 12th Floor Midland Bldg., Cleveland, Ohio.

COVER THE EARTH

PRODUCTS OF
SHERWIN-WILLIAMS RESEARCH

Can't Get Spray Equipment?

To help you until you can obtain delivery of spray equipment, Sherwin-Williams Research has developed a 50-gallon sprayer that can be easily built in your shop for under $40. For *free* plans and specifications, write Dept. D-7, 12th Floor Midland Bldg., Cleveland, Ohio

Acme White Lead & Color Works, Detroit • W. W. Lawrence & Co., Pittsburgh
The Lowe Brothers Co., Dayton • John Lucas & Co., Inc., Philadelphia • The Martin-Senour Co., Chicago
Rogers Paint Products, Inc., Detroit • The Sherwin-Williams Co., Cleveland

Superior teaching demands the finest teaching aids

Today, more than ever before, teachers need all possible aids to help them carry extraordinarily heavy loads. To lighten this load . . . to speed learning . . . to make good instruction even more effective, nothing excels sound motion pictures.

Filmosound assures the success of audio-visual programs

With constantly growing libraries of educational films covering all subjects from laboratory science to fine arts, Filmosound lets you present sound films to all classes from the grades through college levels.

Filmosound gives you assurance that screen pictures will always be bright and clear. Bell & Howell precision engineering has eliminated flicker and "jump." Sound, cleared of "flutter" and hum, is truly natural, even in large halls.

And so important in school use, Filmosound is simple to operate, runs cool and quietly, and is always dependable. Exclusive Filmosound features eliminate chances of film damage.

Long preferred by schools and colleges

Teachers who have used motion picture aids most successfully know Filmosound as the finest school equipment there is. Plan now to let Filmosound work for you when the fall semester opens. Write for complete information to Bell & Howell Company, 7192 McCormick Road, Chicago 45. Branches in New York, Hollywood, Washington, D. C., and London.

1907 40th ANNIVERSARY 1947

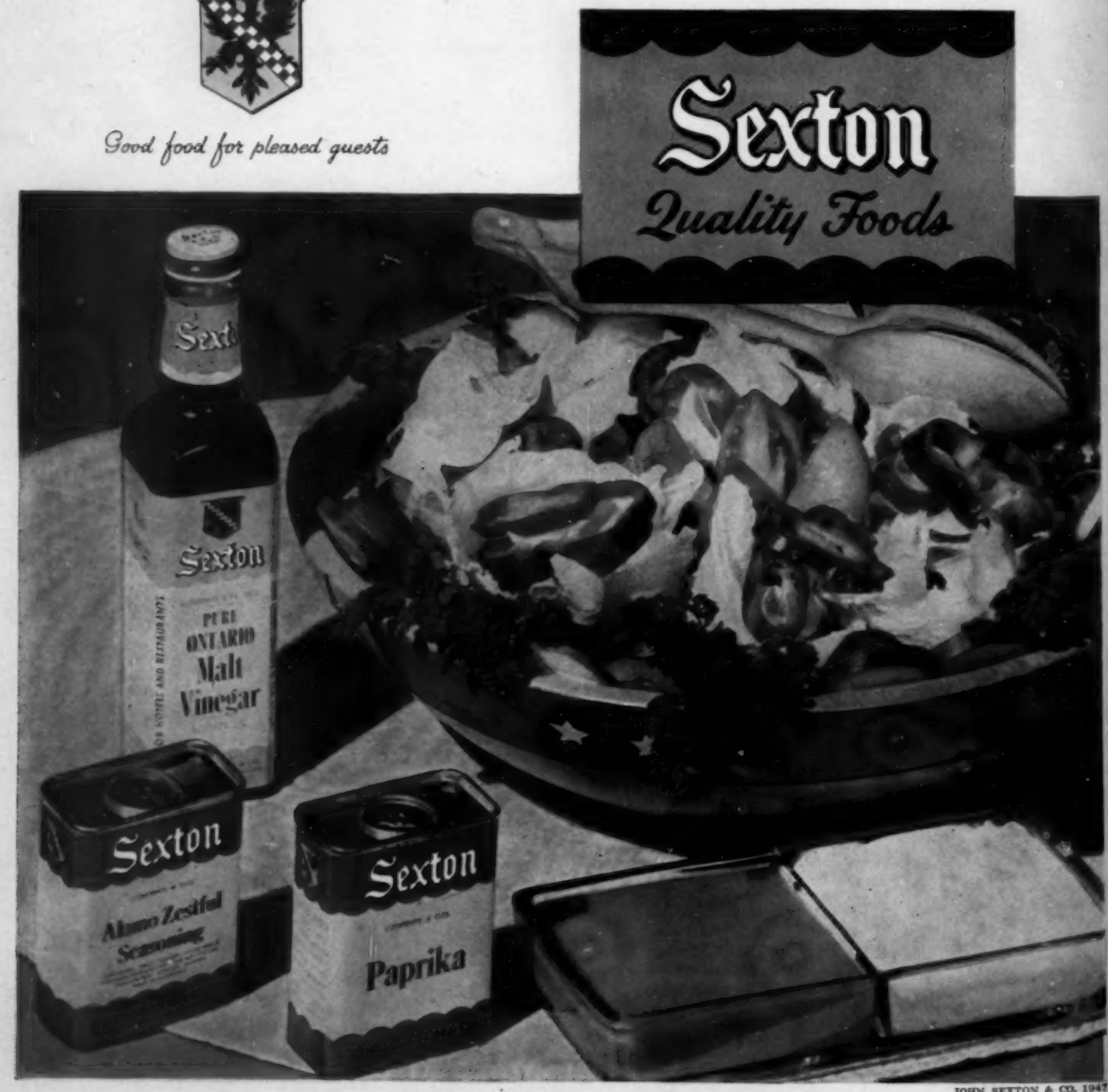
Bell & Howell

Worthy Accoutrements

GARLIC SALT	TARRAGON VINEGAR
ONION SALT	CIDER VINEGAR
CELERY SALT	CAPERS
CELERY SEED	ANCHOVIES
IMPORTED OIL	ARTICHOKE HEARTS
DOMESTIC OIL	PIMIENTOS

Even if it should cost more to top your salads with Sexton exquisite dressings, you would count it money well spent. With them you can please all tastes—including the most fastidious individual taste. No matter what type of salad you specialize in or the accoutrements it needs, Sexton has immediately available a supply that will insure a finished salad worthy of your artistry.

Good food for pleased guests



JOHN SEXTON & CO. 1947